

Peninsular

Warm Air
Circulators



Holl

The Peninsular Stove Co.
DETROIT — CHICAGO
NEW YORK



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Peninsular

Warm Air Circulators
and Pipeless Furnaces



A Catalogue
Of Advanced Ideas of
Satisfactory Economical
and Healthful Heating

No 321



Works, Salesrooms and General Offices DETROIT, MICHIGAN

Western Offices, Salesrooms and Warehouse
434-500 South Canal Street, CHICAGO, ILLINOIS

TERMS

All Prices Subject to Change without Notice

All accounts are due and payable net 30 days from date of invoice.

Accounts paid within 10 days from date of invoice will be subject to a cash discount of two per cent.

All bills payable in New York, Chicago or Detroit par funds. No allowance for exchange or express charges.

Claims against invoices must be made within five days after receipt of goods.

Transportation companies make two classifications, viz., carrier's risk and owner's risk (released). When shipped at carrier's risk, rates are two or three times higher than when shipped at owner's risk. Hence we always ship at owner's risk, released.

Breakages

We shall, however, always be pleased to assist the trade in overcoming breakage or overcharges by transportation companies, or the mishandling of any of our shipments. Your request in this connection will have our prompt attention.

A nominal charge on all parcel post shipments will be made for packing and insurance.

Claims for damages or shortage must be made within 30 days from date of shipment, as the transportation companies require.

Do not refuse a shipment on account of damage, but call the agent's attention to its condition, have him note it on freight bill, then pay freight charges.

If agent will not accept claim, get his written refusal. Send us all the papers and we will endeavor to collect for you.

Claims for trivial or incidental breakage will not be entertained.



The Importance of Installing a Warm Air Circulator Large Enough to Economically Heat a Building

The most important point in installing a Warm Air Circulating and Heating System is to use a circulator that is large enough to heat the house or dwelling economically in zero weather. One that does not have to be run over its maximum efficiency.

In making tests of our circulators the following scientific instruments are used:

1—A Mercury Thermometer, which registers the temperature of the air.

2—Anemometer, which is used to measure the velocity of the cold air going into the circulator and the warm air leaving.

3—Water Draft Gauge, which is used for testing the draft of the chimney and flues.

4—Electric Recording Pyrometer, which is used for registering the higher temperatures of the flues and smoke pipe.

5—Hygrodeik, which measures the humidity in the air.

The universal source of heat for heating purposes is derived from coal. First we must find the heating units in the coal used; these heating units are known as B. T. U.—British Thermal Units.

One B. T. U. is the amount of heat necessary to raise the temperature of one pound of water one degree on the Fahrenheit scale.

The number of B. T. U. per lb. in coal varies from 9000 to 14500 B. T. U.

A Calometer is employed to find the B. T. U. in the coal used.

How the B. T. U. in Coal Are Determined

A sample of coal to be tested is carefully weighed and thoroughly dried, after the drying it is again weighed to determine the amount of moisture present. Then, the coal is pulverized, weighed accurately and placed in a metal cylinder. This cylinder is placed in a receptacle which contains a given amount of water; then this receptacle is thoroughly insulated to prevent the loss of heat from the water to the surrounding air. A thermometer is immersed in the water through an opening in



the cover. This metal cylinder is slowly rotated by means of a small motor during the test, and the paddle wheels on the side of the cylinder keep the water in motion so as to produce a uniform temperature. The pulverized coal is mixed with a chemical and ignited by means of a piece of hot metal or electric spark. The burning of the coal raises the temperature of the water which is recorded by the thermometer, then from this by a mathematical formula, the B. T. U. in the coal are figured.

In making the test throughout a given number of days, an accurate record is kept of the amount of coal used, the volume of air passing through the furnace, and the rise in the temperature of the air. When we know how much coal is used and its heating value per pound, how many cubic feet of air pass through the circulator and the temperature of the air entering the heater and the temperature when discharged, it becomes a mathematical problem to find out what percentage of the heating value of the coal consumed was absorbed by the air passing through the heater during the testing period. From the total B. T. U. of the fuel consumed we deduct the heat units transmitted to the air. The difference represents the loss which goes up the chimney.

Reason Why You Should Install a Warm Air Circulator of Ample Capacity

The main reason why an undersized circulator consumes more fuel than one of proper capacity is due to the excess amount of air entering it when operated at a high rate of combustion, or in other words, it is being run above its maximum efficiency.

Excess air only reduces the temperatures of the gases produced by the burning fuel, thus reducing the temperature of the circulator. The heat absorbed by this excess air is carried away up the chimney and is a total loss.

When you use a circulator with reserve capacity that does not have to be over-fired and pushed, you do away with this excess air and, consequently, get full results from the fuel consumed.

In our experiments we have found the efficiency of a circulator to vary from 40 to 85 per cent, according to the rate of combustion with which it is operated.

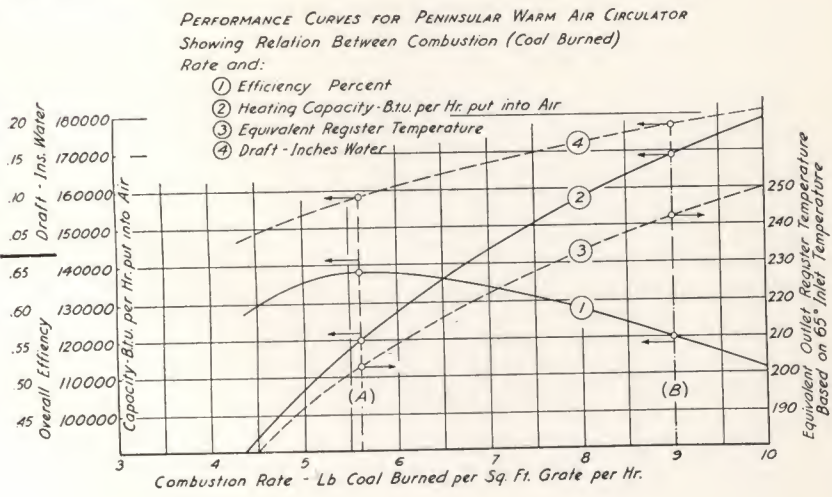
*Remember The Harder You Push a Circulator the
Less Efficient it is.*

*Always install a Warm Air Circulator that will give
you a margin of safety of 33 per cent.*



Performance Curves for Peninsular Warm Air Circulator

Explaining the maximum efficiency of a warm air circulator. The maximum or greatest efficiency of anything is that point where it produces the best results possible in proportion to the amount put in. So it is with the warm air circulator. There is a point where it gives the best results or produces the most heat for the amount of coal used, and when the circulator is fired harder it may produce more heat but it uses far more fuel in proportion to the heat given than it should. This may be shown by so-called "characteristic curves," the same as an electric motor, steam engine, etc., performance is shown by "characteristic curves." The essential factors in obtaining the curves are as follows: (a) Rate of combustion (pounds of coal burned per square foot of grate surface per hour). (b) Efficiency of the circulator (ratio of heat put into air passing furnace to total heat value of coal burned, usually expressed as a percentage). (c) Capacity of circulator in B. T. U. per hour which is the heat put into the air passing the furnace. (d) Equivalent register temperature of air leaving register based upon 65 degrees Fahrenheit inlet temperature. (e) The draft at the smoke outlet in inches of water (water is placed in a U tube and this is connected to the smoke pipe by means of a hose. As the draft increases it relieves the pressure on one side of water in the U tube and the water is lower on one side than the other in proportion to the strength of the draft). An inspection of the following figure will show the performance of a Peninsular circulator being tested for all combustion rates between 4½ pounds of coal and 10 pounds of coal per square foot of grate surface.



The combustion rates are shown along the horizontal line at the bottom of the figure. With these curves it is a simple matter to see under what conditions a warm air circulator will develop its maximum efficiency. The vertical (dot and dash line A) is drawn through the point where the curve showing the efficiency (1) is the highest; this dot and dash line (A) will then cut all the



other curves as follows: (1) Efficiency=64 per cent. (2) Heating Capacity=120,000 British Thermal Units per hour. (3) Equivalent Outlet Register Temperature=202 degrees Fahrenheit. (4) Draft in inches of water=0.085, or almost one-tenth of an inch. (5) Rate of Combustion=5 3/5 pounds of coal per square foot of grate per hour. The heating capacity just found in B. T. U. is not the greatest amount of heat this circulator will generate by any means, but is its capacity at maximum efficiency. The heating capacity of this circulator may be increased 50% if the chimney draft can be doubled. By increasing the draft to almost two-tenths of an inch and burning 9 pounds of coal per square foot of grate surface (as shown in dot and dash line B). You only get 55% efficiency or only 55% of the heat that is in the coal the circulator is burning. But the circulator generates 169,000 British Thermal Units per hour and the temperature at the register is 242 degrees Fahrenheit and the circular burning 9 pounds of coal per hour. Therefore, in short this performance shows why a warm air circulator should be installed plenty large enough to heat a house without being pushed for coal is wasted when circulator is run hard. It also shows that the average temperature at the register in zero weather should be about 202 and a circulator of the proper size should burn on the average of 5 3/5 pounds of coal per hour per square foot of grate surface.

Chimney of Right Proportions is Most Essential to a Warm Air Circulator.

Much time and money has been expended in designing and building improved types of warm air circulators which would make far greater economy in heating. It would be no more than fair that architects and builders do their part in furnishing proper chimney flues. A warm air circulator is likened to a human being, it has to have oxygen to burn and you shut off or decrease the oxygen and it will soon die out. Each atom of carbon requires for perfect combustion two atoms of oxygen. When this union is effected it burns to carbon dioxide and yields per pound of coal 14,500 B. T. U. (heat units). If, however, through insufficient air supply there is but one atom of oxygen to one of carbon the result is carbon-monoxide, giving only 4,500 B. T. U., or less than one-third the heat given off when combustion is perfect, and combustion can not be perfect unless there is a perfect chimney that has the strength to pull the oxygen into the coal which is called draft. With a weak draft or too little air passing through the coal, the fire has no life. It is just red and not a real white heat and in such a case more fuel is burned but with nowhere near the heat. A warm air circulator itself has no draft. It may have been installed perfectly and yet it might consume an unreasonable amount of fuel for the heat given off with a poor draft.

The best flue is a round one as smoke always travels in a circular motion and in a round flue there are no dead air spaces. The next best is the square 8 x 8 flue or any square size. The poorest is the rectangular flue. A 4 x 12 flue has no advantage over a 4 x 4 inch flue as the smoke rising in a circular motion leaves dead air space in the ends which tends to a down draft.

One of the greatest complaints in chimneys is where there are two flues, one for a fire place, the other for the circulator, where there is no division wall from the fire place to the basement—a back draft is caused which retards the draft, making it impossible for the circulator to heat properly.



To avoid any chance of this, extend the circular flue to a point just below where the smoke pipe enters and in no case leaving more space than sufficient to accommodate a 2 inch by 8 inch clean out door and end there with a piece of iron for a bottom, cemented all around so as to be absolutely air tight, this will make sure of no back draft between the two flues, caused by a poorly built chimney.

Rate of Combustion

It has been shown repeatedly in tests of Peninsular warm air circulators that the proper rate of combustion should be based on the burning of five and three-quarters pounds of coal per square foot of grate surface. This rate of combustion is for heating with the outside temperature at zero. In giving the square inches of pipe area heating capacity of all our furnaces, it is based on this rate of combustion. Our guarantee of ratings is made, provided a sufficient area of piping is installed for each room and the piping properly run.

Of course, it must be understood that this rate of combustion is for zero weather and as the average outside temperature through the winter runs very much above this, you can see that the average rate of combustion will be far less than this. On some testings run through a winter, it ran as low as two pounds of coal per square foot of grate surface. The square feet of grate surface of all our warm air circulators is shown in the dimensions directly underneath the cut of the circulator. With this information you can judge the amount of coal that would be consumed by each respective circulator.

Arriving at Proper Pipe Area

The rule for finding out the proper size pipe for a room of given size is very simple and is worked out on the following page. In short the rule is this: In the first part, find the number of square feet of glass surface and equivalent glass surface. (Equivalent glass surface is the wall surface divided by 10.)

We know that one square foot of glass surface cools 75 cubic feet of air per hour. This way we can tell how many cubic feet of air is cooled, and in the last part of the rule find the cubic feet of air in the room to be heated so the air in the room and what is cooled has to be heated. When this is found multiply by .01222 and it gives the number of square inches of pipe area necessary. The number of square inches of pipe area in different pipes will be found on page eleven.

EXAMPLE

Living room required.....	78 sq. inches =	10" pipe
Dining room required.....	64 sq. inches =	9" pipe
Kitchen room required.....	64 sq. inches =	9" pipe
3 bed rooms required, 64" each.....	192 sq. inches =	3' 9" pipe

It is shown that it will take 398 square inches pipe area to heat the house. Turn to catalogue page 33 and find the 22-B circulator that will take care of 430 square inches which is the proper one to use.



Full Rule for Determining Heat Requirements

1. Find the total square feet of glass surface in windows and outside doors, taking the full opening measurements and counting outside doors as all glass; then measure the surface in exposed outside wall, from which subtract the glass surface; next reduce the wall surface to equivalent glass surface by dividing the net amount by:

Ten if wall is 8 to 10 inches thick.
Fifteen if wall is 12 to 26 inches thick.
Twenty if wall is 26 to 38 inches thick.

To this result add the glass exposure; then as one square foot of glass surface cools 75 cubic feet of air per hour, multiply the total glass equivalent by 75, which will give the total cubic feet of air to be heated to offset the loss from glass and wall exposure. This total added to the cubical contents of space to be heated gives the amount of air to be heated.

2. For a temperature of 70 degrees Fahr. in zero weather, multiply the amount of air to be heated by .01222, and the result will be the heat requirements in square inches pipe area. For each degree below zero for which the heating is required, add 1 per cent. to the heat requirements.

This rule gives the total heat requirements of the room in square inches pipe area; and judgment must be used in increasing the number of square inches pipe area in the rooms on the cold side, exposed to the north and west, and reducing the number of square inches pipe area on the warm side; also making allowance for poorly constructed buildings, loose-fitting windows, etc.

Add the square inches pipe area of all the rooms and choose heater of such capacity as the result indicates.

Showing Rule in Use

PROBLEM:

What are the heat requirements in square inches pipe area of a room 12' x 18' x 9', with four windows, 3' x 5½' each, with two outside walls 10" thick—heating required for 10 degrees below zero?

ANSWER:

Square feet of glass surface, $3 \times 5\frac{1}{2} \times 4 = 66$.

Square feet of outside wall surface, $12 + 18 = 30 \times 9 = 270$.

Net wall surface exposed, $270 - 66 = 204$.

Equivalent glass surface in wall exposure, $204 \div 10 = 20$.

Amount of air cooled by glass and wall surface, $20 + 66 = 86 \times 75 = 6450$.

Cubical contents of room $12' \times 18' \times 9' = 1944$.

Total cubic feet of air to be heated, $6450 + 1944 = 8394$.

Heat requirements in sq. in. pipe area for zero weather, $8394 \times .01222 = 102$.

Heat requirements for 10° below zero, $102 + 8 = 110$ sq. in. pipe area.

*Note: The co-efficient or factor .01222+, which we advise using, as per rule, is derived from the following formula:

$$H. S. = \frac{H \times 55 \times 144}{60 \times 3 \times 3600} = .01222 +$$

In the above formula H. S. = Area of heat stack in square inches.

H. = Heat loss from room in B. T. U. per hour.

55 = Number of degrees through which one cubic foot of air can be heated by one B. T. U.

144 = Number of sq. in. in one sq. ft.

60 = Average difference in temperature between air leaving register and room temperature.

3 = Average velocity in feet per second of air in heat stack to first floor rooms.

3600 = Number of seconds in one hour.



Rules for Pipes

1. Each warm air pipe should have an upward pitch from the heater of not less than 1 inch per foot.
 2. The pitch of all warm air pipes should be alike. Equalize by bringing down lower into the cellar the boxes of the shorter warm air pipes.
 3. The table of warm air piping in this formula applies where cellar or basement pipes are not over 15 feet in length.
 4. When a warm air pipe in cellar is more than 15 ft. long, add 1 in. to the diameter of such pipe for each 5 ft. or part thereof, of length in excess of 15 ft..
 5. An offset in the riser pipe is equivalent to an addition to the length of the cellar pipe, and should be counted in when measuring the total length of the cellar pipe.
 6. All warm air pipes in cellar or basement should be covered with non-heat conducting pipe covering. Not less than 10-lb. sheathing is recommended.
 7. All warm air risers should be carried up in inside partitions, wherever possible.
 8. In cases where it is absolutely necessary to carry up warm air risers in outer walls, such risers should be so thoroughly protected as to be completely insulated.
 9. In using double wall pipe the capacity should not be reduced.
 10. A separate compartment should be made in the crown or bonnet of the surface for each extra long or winding air pipe, thus insuring a positive supply of warm air to that pipe.
 11. *Never use smaller than eight (8) inch pipe.*
 12. When warm air pipes are taken out of the top of the bonnet of the heater, the tops of all the elbows should be on a level, so that an equal current of air can fill all the pipes.
- Note:* As a 12-inch elbow is so much higher than an 8-inch elbow, in order to have both pipes work properly, the top of the 8-inch elbow should be as high as the top of the 12-inch. This applies to all pipes taken from the top of the heater. The same rule applies as nearly as possible where pipes are taken from the side of the bonnet.
13. Rooms on the sides of the house exposed to prevailing winds should always have one size larger pipes and registers than the same sized rooms on the sides of the house not so exposed.
 14. Rooms having bay windows and considerable more than the average glass surface on the northern side of the house, should have two sizes larger warm air pipes and registers than the same sized rooms without this extra glass surface on the southern side.
 15. Where warm air pipes pass through the wall in the cellar, an air space around the pipes should always be left. Never mason a pipe in solid that passes through a wall in the cellar, as the wall chills the pipe and makes that pipe almost worthless.
 16. All warm air pipes should have dampers close to the heater, so the heat from them can be regulated.
 17. All rising pipes in partitions or walls should be enlarged or boxed out where cellar pipes enter them. This is necessary to avoid friction and insure a rapid flow of air.
 18. All rising warm air pipes running from second to third floor should always have damper above the register on second floor. Rising pipes should be wrapped with asbestos and studs lined with tin, using wire or iron lath to plaster on.
 19. The friction from abrupt bends or acute angles in warm air pipes must be avoided.



20. Fireplaces in rooms having flues 12" x 12", which is equal to 144 square inches, or 8" x 12", which is equal to 96 square inches, or 8" x 8", which is equal to 64 square inches, will in cold or windy weather pull off more air from a room than the warm air pipes can deliver. In such cases, use sheet-iron throat pieces with sliding damper in fireplace flue. The ventilation can thus be regulated as desired.

21. In heating a room on the cold side of the house, or a room having a large amount of glass surface, place one register in the floor as near as possible to the furnace and place a cold air register face in the floor under or near a window and connect this cold air register by means of a separate duct to the bottom of casing, thus removing the cold air out of the room and at the same time providing a flow of warm air into the room.

22. The heater must be attached to a chimney flue of correct construction, one that will furnish sufficient draft to insure a good combustion of fuel.

23. *The fresh air supply to the heater must be adequate.*

Pipe and Register Sizes

The table below is printed in order that installers may be able to see at a glance equivalent areas of round pipes, flat register pipes, risers and registers.

Risers to rooms above the first floor should be large enough to supply to the room to be heated the proper volume of warm air.

On account of this increasing velocity on the upper floors of a residence, smaller pipes can be used than those to the first floor, but the necessary free air opening into the upper rooms must not be overlooked.

Table Two

(All measurements in inches)

Diameter of Round Pipe	Area of Pipe Sq. In.	Size Flat Riser Pipe	Size Side Wall Register	Size Round Floor Register	Size Rect. Floor Register
8	50	3½ x 14	8 x 12	12	8 x 12
9	64	4 x 16	10 x 12	14	10 x 12
10	78	4 x 20	12 x 12	14	10 x 16
11	95	6 x 16	12 x 15	16	12 x 15
12	113	6 x 19	14 x 15	18	12 x 20
13	132	6 x 22	14 x 18	18	14 x 18
14	154	8 x 19	16 x 18	20	14 x 22
15	176	8 x 22	16 x 20	24	16 x 20
16	201	8 x 25	18 x 20	24	16 x 24
17	227	10 x 23	18 x 24	24	18 x 24
18	254	10 x 26	20 x 24	24	18 x 27
19	283	12 x 24	20 x 26	28	20 x 26
20	314	12 x 26	22 x 26	28	20 x 30
21	346	12 x 29	24 x 27	30	22 x 30
22	380	14 x 27	24 x 30	30	24 x 30
23	415	14 x 30	27 x 27	30	24 x 32
24	452	14 x 32	28 x 28	36	24 x 36

Table of Averages

If it is desired to ascertain the approximate size of pipe required to heat a given room without figuring the rule shown on page nine, but only taking into consideration the dimensions of the room, the following table may be used which under ordinary circumstances runs very close.

Table Three—Wm. G. Snow

Table on next page shows the proper size of furnace pipes (the lower number shows the size pipe for first floor, the upper number the size pipe for second floor) to heat rooms of various dimensions, when two sides are exposed, temperature at Register 140 degrees, Room 70 degrees, Outside zero, Rooms 8 to 17 feet in width, assumed to be 9 feet high. Rooms 18 to 20 feet in width assumed to be 10 feet high. For other heights, temperatures or exposures make a suitable allowance. When first floor pipes are longer than 15 feet, use one size larger than that stated.



Width of Room in Feet

	8	9	10	11	12	13	14	15	16	17	18	19	20
Length of Room in Feet	8	8	X										
	8	8											
	9	8											
	10	8	8										
	11	8	8	8									
	12	8	8	8	9								
	13	8	8	8	8	8							
	14	8	8	8	8	8	8						
	15	8	8	8	8	8	8	9					
	16	8	8	8	8	8	8	9	9				
	17	8	8	8	8	8	8	9	9	9			
	18	8	8	8	8	8	8	9	9	9	9		
	19	8	8	8	8	8	8	9	9	9	9		
	20	8	8	8	8	8	8	9	9	9	9		
	21	8	8	8	8	8	8	9	9	9	9		
	22	8	8	8	8	8	8	9	9	9	9		
	23	8	8	8	8	8	8	9	9	9	9		
	24	8	8	8	8	8	8	9	9	9	9		
	25	8	8	8	8	8	8	9	9	9	9		
	26	8	8	8	8	8	8	9	9	9	9		
	27	8	8	8	8	8	8	9	9	9	9		
	28	8	8	8	8	8	8	9	9	9	9		
	29	8	8	8	8	8	8	9	9	9	9		
	30	8	8	8	8	8	8	9	9	9	9		

FOR EXAMPLE—A room 12 feet in length and 10 feet wide on first floor would take 9 inch pipe marked X the size of second floor pipe 8 inch marked A.



One 12" pipe equals two 9" pipes
 One 13" pipe equals two 10" pipes
 One 14" pipe equals two 11" pipes
 One 15" pipe equals two 12" pipes
 One 16" pipe equals two 12" pipes
 One 17" pipe equals two 13" pipes

For third floor use one size smaller than for second floor.

For rooms with three exposures increase pipe given in table in proportion to the exposure.

For halls use pipe of ample size to allow for loss of heat to second floor.

First Floor Pipe and Sizes of Risers

Installers of warm air heaters must lend their aid in persuading architects and builders, as well as the owners, to consider carefully the proper size of risers within the walls in order that the ultimate installation will not be handicapped by too small an area in such risers.

Registers

Table Four

(All measurements in inches)

Round Pipe	Cross Sec.	Register Sizes Floor and Plain Side Wall	Free Air Opening Sq. In.	Register Sizes Baseboard, 1st Floor Only	Free Air Opening Sq. In.	Register Sizes Baseboard 2d and 3d Floor, In. Opening	Free Air Opening
8	50.27	8 x 12	52.90	7 x 12	53.20	8 x 10	49.50
9	63.61	10 x 12	66.47	8 x 13	64.40	8 x 12	59.65
10	78.54	12 x 14	83.03	10 x 12	75.00	9 x 12	66.16
11	95.03	12 x 15	89.04	10 x 14	87.71		
12	113.09	14 x 16	111.07	12 x 14	105.51		
13	132.73	14 x 18	125.10				
14	153.93	16 x 20	172.00				
15	176.71	18 x 20	193.85				
16	201.06	20 x 20	215.70				

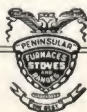
Chimney Flue

After the proper size warm air circulator has been determined, the proper size of chimney flue may be determined by referring to Table Five, which follows:

Table Five

Diameter Round Chimney Flue Inches	Size Square Chimney Flue Inches	Size Rectangular Chimney Flue Inches	Height of Chimney Flue Above Grate Feet
8	7½ x 7½	6 x 10	30
9	8½ x 8½	8 x 10	32
10	9½ x 9½	8 x 12	34
11	10½ x 10½	10 x 12	36
12	11½ x 11½	10 x 14	38
13	12½ x 12½	12 x 14	40
14	13½ x 13½	12 x 16	40
15	14½ x 14½	14 x 16	40
16	15½ x 15½	14 x 18	40
17	16½ x 16½	14 x 20	40
18	17½ x 17½	16 x 20	40
19	18½ x 18½	16 x 22	40
20	19½ x 19½	18 x 22	40

Above Measurements Are Inside Dimension



Directions and Rules for Cold Air Supply

1. The cold air supply to the heater *must* be adequate.
2. Always bring in the cold air from the coldest side of the house—West, Northwest, or North.
3. Cold air boxes, when the air supply is taken from the outside, should be equal to four-fifths ($4/5$) of the total warm air pipe capacity. When air is taken from the inside of the house, the cold air opening into the heater should be of equal capacity to all of the warm air pipes.
4. Do not take cold air direct from outside to the heater from East or South. When this is done, it will be noted that warm air frequently comes out of the cold air box or the heater seems to be breathing. A current of warm air will pass up thru the pipes and then suddenly stop, and the air will suck down the register. This condition can be easily overcome by the use of what is called a cold air room, or air supply chamber. The best results are always obtained by taking the cold air from the inside of the house.
5. A cold air pit under the heater should never be more than 14 inches deep. A pier in center is desirable to support ash pit where necessary. When more than one air opening, put partition across pit.
6. The cold air box opening into casing of heater should never be higher than the total height of ash pit and should enter the heater from the rear to obtain the best results.
7. Cold air box should have closing damper near opening, also a connecting cold air pipe from the main hall. This is suggested in order to admit air during the night or during extreme weather. Inside air supply should be parallel and separate.
8. In connecting cold air box with heater, it is always most desirable to make the connection in the rear of the heater, or when two cold airs from inside are used connect one on each side.
9. Heaters must have and will have air, and this air should be supplied from the cold air opening at the bottom of the casing. The top of any cold air opening should never be above the level of the grate.
10. The size of the cold air boxes and cold air base plates which supply the heater when taken from a main hall or other room down to the heater, should always have the full capacity of all the pipes combined.

Heat Value and Composition of Various Fuels

Name of Combustible	Composition				Calorific Power B. T. U.
	C	H	Volatile Matter	Ash	
Carbon.....	1.00	....	....	....	14,400
Anthracite Coal.....	0.90	0.03	0.03	0.01	13,500
Bituminous.....	0.85	0.05	0.06	0.06	14,400
Lignite.....	0.70	0.05	0.20	0.05	11,700
Peat.....	0.55	0.05	0.30	0.10	9,000
Peat 0.30 Water.....	0.39	0.04	0.05	0.07	7,200
Coke.....	0.85	0.05	....	0.10	12,600
Peat—Charcoal.....	0.82	....	....	0.18	9,000
Dry Wood.....	0.48	0.06	0.05	0.01	7,200
Wood 0.20 Water.....	0.40	0.05	0.25	0.01	5,400
Wood—Charcoal.....	0.80	....	0.04	0.07	10,800
Hydrogen.....	....	1.00	....	....	62,000
Carbonic Oxide.....	0.43	....	0.57	....	4,320
Illuminating Gas.....	0.62	0.21	0.17	....	18,000
Gas from Blast Furnace.....	0.06	0.02	0.92	....	1,620

Note: Above information is quoted from standard authorities. Not guaranteed.



Approximate Volume to which 1 cu. ft. of air at 0° will expand when heated to the temperatures stated in the table. Volume of air at 0° equals 1 cu. ft.

Volume When Heated to		Volume When Heated to	
Deg.	Cu. Ft.	Deg.	Cu. Ft.
10.....	equal 1.02	110.....	equal 1.24
20.....	equal 1.04	120.....	equal 1.26
30.....	equal 1.06	130.....	equal 1.28
40.....	equal 1.09	140.....	equal 1.30
50.....	equal 1.10	150.....	equal 1.33
60.....	equal 1.13	200.....	equal 1.44
70.....	equal 1.15	300.....	equal 1.65
80.....	equal 1.17	400.....	equal 1.87
90.....	equal 1.20	500.....	equal 2.09
100.....	equal 1.22		

Weight of Dry Air per Cubic Foot at Different Temperatures

Temp. Deg. F.	Wt. of a cu. ft. in lbs.	Temp. Deg. F.	Wt. of a cu. ft. in lbs.
0.....	0.0864	112.....	0.0694
12.....	0.0842	122.....	0.0682
22.....	0.0824	132.....	0.0671
32.....	0.0807	142.....	0.0660
42.....	0.0791	152.....	0.0649
52.....	0.0776	162.....	0.0638
62.....	0.0761	172.....	0.0628
72.....	0.0747	182.....	0.0618
82.....	0.0733	192.....	0.0609
92.....	0.0720	202.....	0.0600
102.....	0.0707	212.....	0.0591

Testing Installations

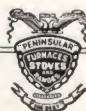
Completed installations may be tested at any time of year by means of the following table of outside and inside temperatures (Carpenter).

To Equal a Temperature of 70° Fahrenheit in Zero Weather

If outside temperature is—

It is necessary to maintain
inside temperature of—

10 below zero, Fahrenheit.....	64 above zero, Fahrenheit
zero, Fahrenheit.....	70 above zero, Fahrenheit
10 above zero, Fahrenheit.....	75 above zero, Fahrenheit
20 above zero, Fahrenheit.....	81 above zero, Fahrenheit
30 above zero, Fahrenheit.....	85 above zero, Fahrenheit
40 above zero, Fahrenheit.....	90 above zero, Fahrenheit
50 above zero, Fahrenheit.....	98 above zero, Fahrenheit
60 above zero, Fahrenheit.....	104 above zero, Fahrenheit
70 above zero, Fahrenheit.....	110 above zero, Fahrenheit
80 above zero, Fahrenheit.....	117 above zero, Fahrenheit
90 above zero, Fahrenheit.....	123 above zero, Fahrenheit



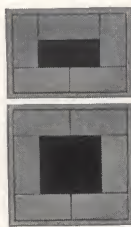
Showing Faulty Chimneys and Why They Don't Work



Brick and Mortar in Chimney



Leaky Chimney



Top, Long Narrow Flue. Bottom, Proper kind Flue Square



Stove Connected to Chimney Flue



Clean-out Door Open in Basement



1



2



3

1—Shows smoke pipe not in far enough and a hole all around smoke pipe.

2—Shows proper way with smoke pipe in far enough and cemented tight.

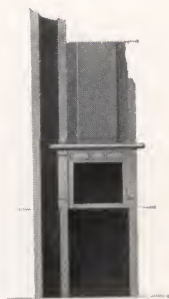
3—Smoke pipe shoved in too far.



1



2



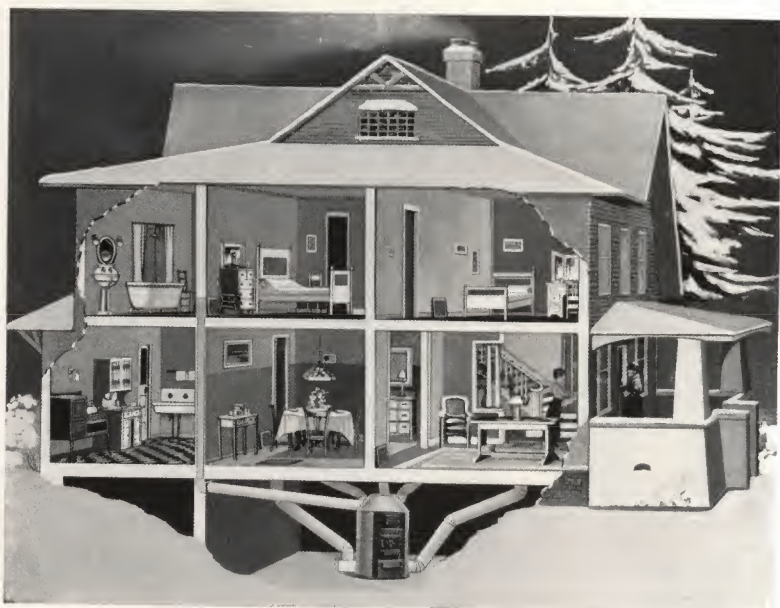
3

1—Chimney lower than roof, causing down draft.

2—Tree higher than chimney causing down draft.

3—Showing two flues, one for furnace, one for fireplace, with no dividing wall from fireplace to bottom. These flues should be absolutely independent.





Cutaway view showing how a Peninsular Pipe Warm Air Circulator looks installed. This view shows a warm air pipe to every room and two cold air returns; one entering on either side of the circulator which makes perfect circulation and an evenly heated house.



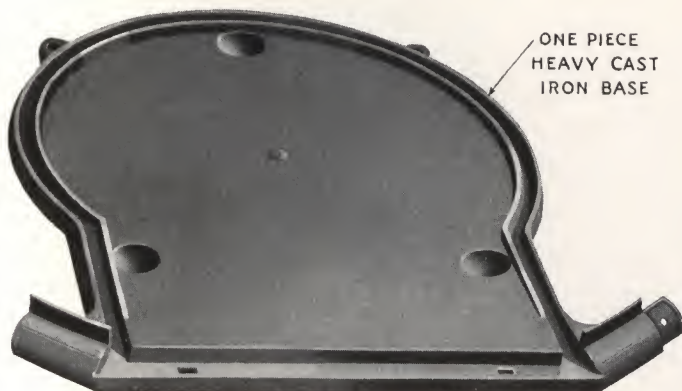
Peninsular Hot Blast Warm Air Circulator

Series 8840 - 8844 - 8848 - 8854

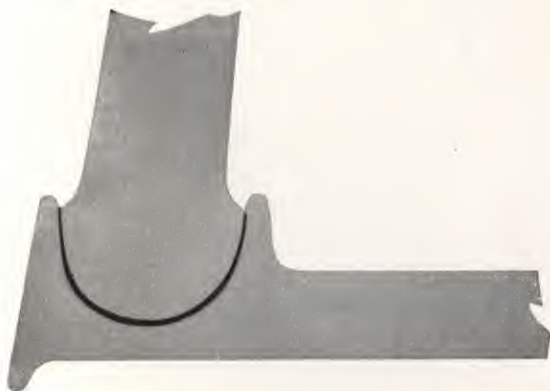
Extra Heavy All Cast Iron Construction

Built especially for soft coal, but will burn any kind of fuel.
The largest All-Cast Warm Air Circulator made.

Construction Features



*One Piece, Heavy Cast Iron Base Used in Peninsular
Warm Air Circulators*

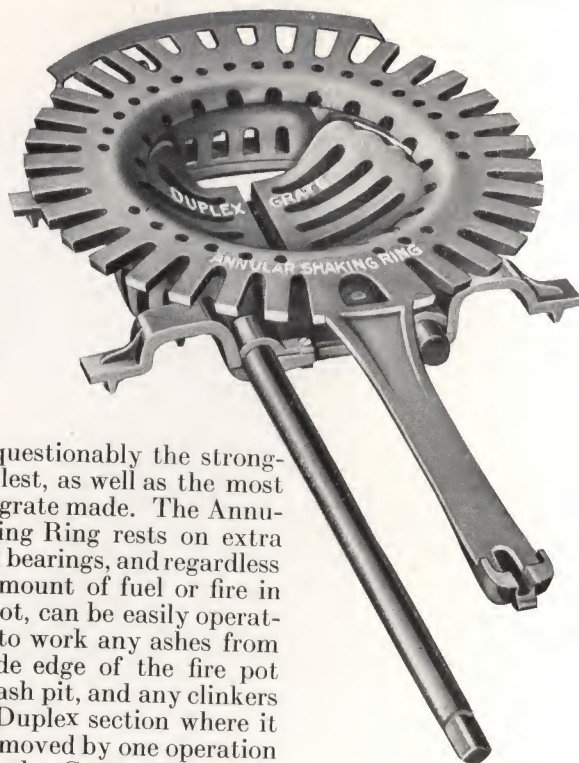


Peninsular Extra Deep Cup Joint at Base

This Peninsular cup joint used on all parts of all our Warm Air Circulators is a positive guarantee against any gas or dust leaking through the joints; when the cement in these joints has dried they are as tight as if welded.

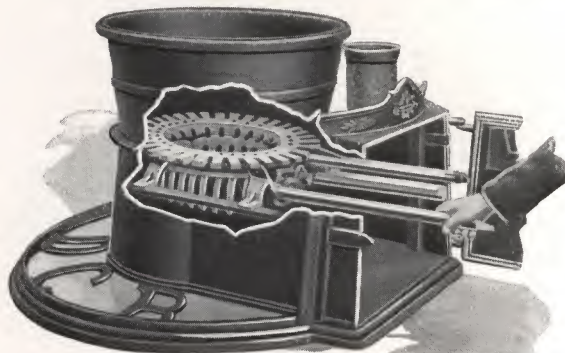


Peninsular Duplex Grate Used in 8840 Series



Is unquestionably the strongest, simplest, as well as the most efficient grate made. The Annular Shaking Ring rests on extra large ball bearings, and regardless of the amount of fuel or fire in the firepot, can be easily operated so as to work any ashes from the outside edge of the fire pot into the ash pit, and any clinkers into the Duplex section where it can be removed by one operation of the Duplex Grate without losing any of the burning coal, thus leaving the live fire next to the fire pot, which greatly increases the efficiency of the heater.

Entire grate and frame is portable, and can easily be removed through ash pit door by pulling it out on tracks provided for the



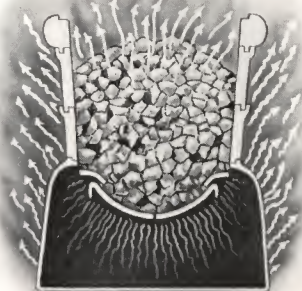
purpose, without removing a single plate or bolt. Ash pit is large enough for a man to enter when necessary to make repairs in the interior of the pit circulator, without taking it down.



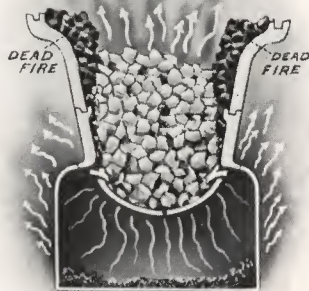
Peninsular Fire Pots

Fire Pots are made in two sections, with a deep cup joint in the center allowing for expansion and contraction where it is necessary. Walls are made straight and are deeper than other circulators on the market. They are almost as large at the bottom as at the top. In almost every other make you will find the walls slant and the fire pot contracts very much at the bottom.

A 22-inch Peninsular fire pot holds as much fuel as a 24-inch pot of other manufacturers on account of its depth and straight walls of the fire pot.



The Peninsular Way No. 1



The Other Way No. 2

Some fire pots are made extremely large across the top and small across the bottom, and cannot be used for accurate comparison as shown in above cut.

Suppose, in the illustration, that the pots are both 24 inches across the top; the first is 22 inches and the second 16 inches in diameter at the bottom, the first will supply 50% more heat than the second.



Peninsular Hot Blast

Which is furnished with the 3840 Series, is the simplest and most effective way known to modern furnace builders to burn all classes of soft coal with cleanliness and without smoke.

It has two supply inlets to which air is forced into the hot blast chamber, formed by a hollow cast ring which completely encircles the top of the fire pot. This ring is securely mounted



Peninsular Hot Blast

and bolted to bottom of feed section, making it impossible for any leakage of gas or air that would interfere with receiving the full benefit of the "Hot Blast" principle of burning smoke and carbonous gases which exist to a great extent in all bituminous coal.

Heated to a great degree, the air rushes through the perforations in ring into fire chamber and mixes with the carbon or coal gas, causing so complete a combustion that the smoke and fuel are all consumed with no waste. Each hole throws a jet of flame 6 inches to 8 inches long as if it were a gas ring.





Feed Section or Combustion Dome

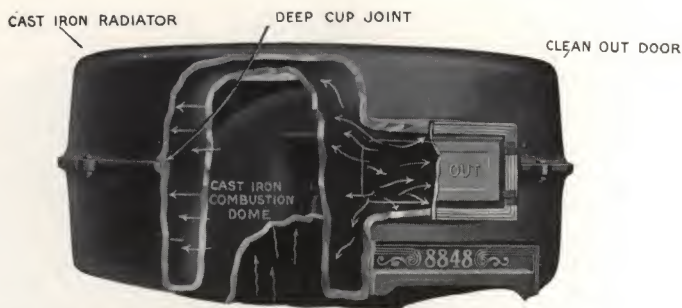
The purpose of this section, as its name implies, is to aid in the complete combustion of fuel. To make this possible in Peninsular Furnaces, they are liberally proportioned in size, each part being made large to enable the gases and fuel products to perfectly mix and ignite.

You will notice how the hot blast ring is built onto the feed section. It is on the outside of the casting and, consequently, will never burn out.



Broken view showing action of Dust Flue and Dust Flue Damper used when shaking down fire





Peninsular All-Cast Iron Radiator

Used Exclusively on the 8840 Series. Built Especially for Soft Coal. The Largest All-Cast Radiator Made. A Distinctive Peninsular Product

It is conceded there is nothing that will withstand the action of heat (with the exception of fire brick) like Genuine Peninsular Pen-Puri Iron, consequently it is the best material to give the user lasting service.

The immense amount of iron properly distributed in this heater when heated, forms a radiating surface of great capacity and insures a minimum fuel consumption.

The castings are of the same perfection of quality as are used in the manufacture of Peninsular Stoves and Ranges.

New Oxidized Finish Draft Regulator

Is furnished with every Peninsular Warm Air Circulator. This Regulator should be attached to wall at some convenient place on first floor. From this Regulator chains run to the basement and are attached to the draft door and check damper in the 8840 Series. They are also attached to the Hot Blast Draft. This enables the operator to adjust the dampers from the first floor or basement, doing away with the necessity of going up and down stairs.



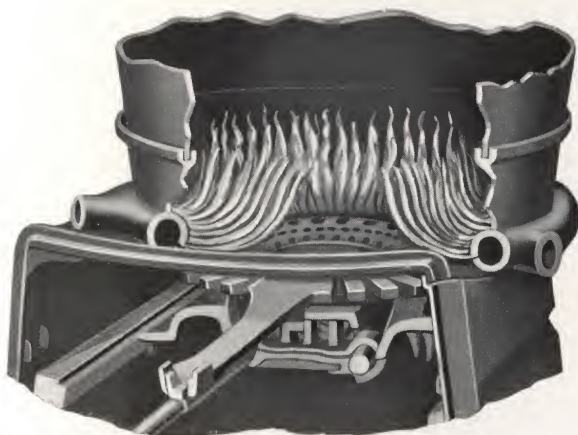
*Peninsular
Furnace
Regulator*

A Peninsular Air Humidifier is furnished with every warm air circulator. No dried out parched air with a Peninsular.



Peninsular Air Humidifier

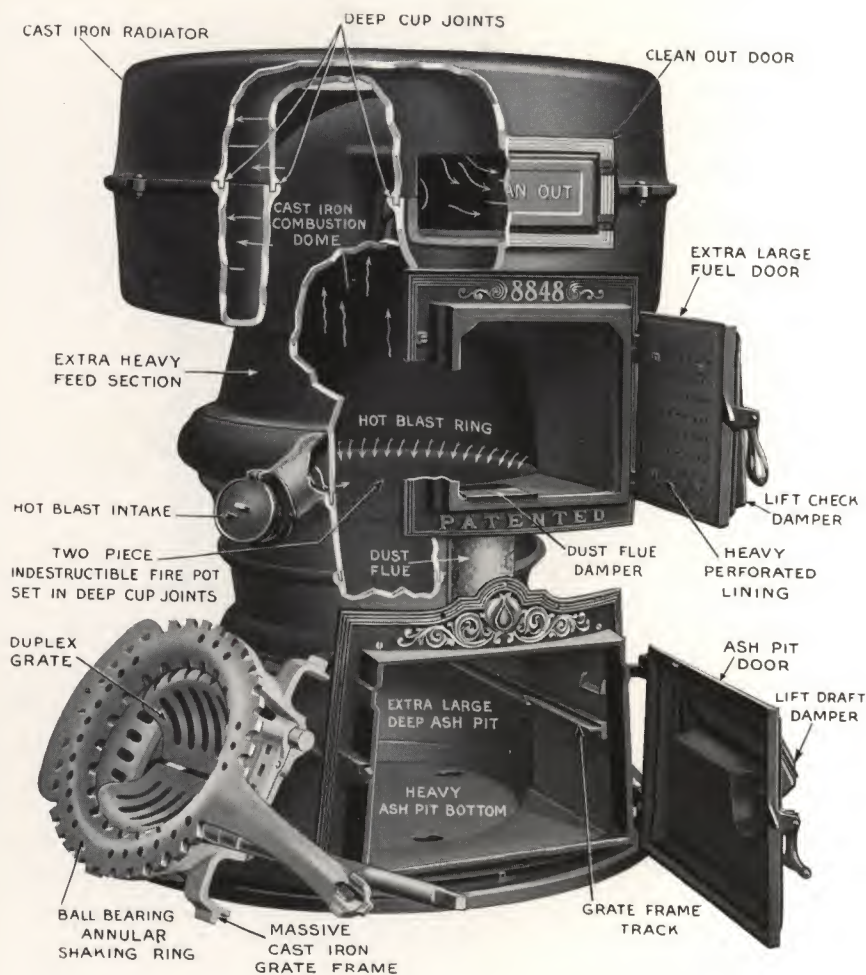




Peninsular Gas Ring

Can be attached to any of our Warm Air Circulators. Is constructed to produce the greatest amount of heat from the least amount of gas. With our Gas Ring the grate complete is left in, no change being necessary to burn either coal or natural gas, a very desirable feature in cold weather when the gas gives out. This ring is also very handy to start the fire with, does away with all bother of kindling, etc. Can be used economically for this purpose with artificial gas.





Sectional View of Peninsular Hot Blast All Cast Iron Warm Air Circulator

Series 8840 - 8844 - 8848 - 8854

*With Hot Blast Smoke Consumer for Soft Coal
Burns All the Smoke*





Peninsular Hot Blast All Cast Iron Warm Air Circulator

Series 8840 - 8844 - 8848 - 8854

Built especially for Soft Coal. Will burn Hard Coal, Coke, Wood or Natural Gas with equal success

ITEM	8840	8844	8848	8854
Inside Diameter Fire Pot at Top	18½"	20½"	22½"	25½"
Depth of Fire Pot	18"	18"	19"	20"
Inside Diameter Fire Pot at Grate	15½"	17"	19"	22"
Diameter of Radiator	35"	36"	39¼"	41"
Height of Radiator	14½"	16"	18"	20"
Height of Circulator	50"	53"	55"	57"
Diameter of Casing	41"	42"	44"	47"
Height of Casing	64"	67"	68"	70"
Diameter of Smoke Collar	9"	9"	9"	9"
Heating Capacity in Cubic Feet	15,000	20,000	30,000	40,000
Heating Capacity, Square Inches Pipe Area	410	475	560	720
Size of Feed Door	11x13½	11x13½	11½x13½	11½x13¾
Grate Area, Square Feet	1½	1¾	2¼	3
Shipping Weight	1125	1291	1475	1815

*Hot water coil for domestic purposes may be had in all sizes
See Price List for prices*



All Peninsulars Are Set Up and Inspected Before Shipping



Every Peninsular Warm Air Circulator is fitted with as much care as our Base Burners or Ranges, and set up complete in our factory.

It is then carefully inspected, dismounted, packed and crated for shipment.

This extra operation costs us thousands of dollars a year.

When you happen to be out in the country with only a hammer and screw driver, a Warm Air Circulator that goes together without filing or fitting will be appreciated and will save you money.

A Peninsular can be put up easily as every part fits. No filing or grinding as it is all done at the factory. When you buy insist on an assembled circulator.



Peninsular Hot Blast Warm Air Circulator

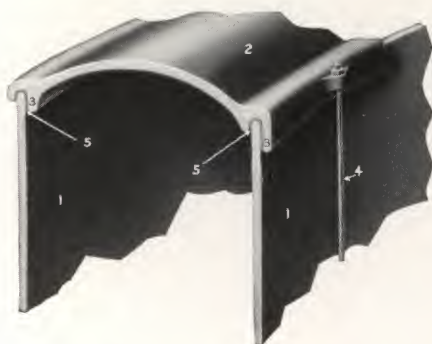
Series 9940 - 9944 - 9948 - 9954 - 9960

Built Especially for Soft Coal, and will Burn Hard Coal, Coke or Natural Gas

In the 9940 Series Peninsular Warm Air Circulator are embodied all the features shown in the 8840 Series, except that the 9940 Series has a very heavy steel Radiator that is lined at the hottest points with cast iron, and for a combination Circulator for both soft and hard coal can not be excelled.

For a description of all the parts of the 9940 Series, including Ash Pit, Grates, Fire Pot, Feed Section, Hot Blast Ring, see pages 16 to 24. This Circulator is the same as the 8840 Series with but one exception and that is a Steel Radiator in place of a Cast Radiator. The Hot Blast Ring that is on the 8840 and 9940 Series furnace is patented and not found on any other Circulator. For instance, if you look through the Water Coil Holes just after you have put hard coal on and notice the fire before opening the Hot Blast Tubes and then the second they are opened a jet of green flame will come from each hole 6 in. to 8 in. long. With soft coal the flame is red, showing that with this patented attachment all the gases that would otherwise go up the chimney unburned are turned into heat, thereby saving a great quantity of coal.

Sectional View of Steel Radiator



- 1—Inner and outer steel.
- 2—Cast iron radiator top.
- 3—Deep cut joints.
- 4—Heavy bolts holding radiator together.
- 5—Black asbestos furnace cement.

After the radiator is mounted as shown, the cement in the deep cut joints hardens and being held with the heavy rods, it is more solid than if welded together—absolutely no chance of dust or gas leakage.





Peninsular Hot Blast Warm Air Circulator

Series 9940 - 9944 - 9948 - 9954 - 9960

Built especially for Soft Coal and Will Burn Hard Coal, Coke, Wood or Natural Gas with equal success

ITEM	9940	9944	9948	9954	9960
Inside Diameter Fire Pot at Top	18½"	20½"	22½"	25½"	27½"
Depth Fire Pot.....	18"	18"	19"	20"	22"
Inside Diameter Fire Pot at Grate.....	15½"	17"	19"	22"	25"
Diameter Radiator.....	35"	36"	38"	40"	51"
Height Radiator.....	18"	18"	18"	19"	20"
Height of Circulator.....	50"	53"	55"	57"	61"
Diameter Casing.....	41"	42"	44"	47"	60"
Height Casing.....	64"	67"	68"	70"	73"
Diameter Smoke Collar.....	9"	10"	10"	10"	10"
Heating Capacity, Cubic Feet	15,000	20,000	30,000	40,000	55,000
Heating Capacity, Sq. In. Pipe Area	410	475	560	720	875
Size of Feed Door	11x13½	11x13½	11½x13½	11½x13¾	11½x13¾
Grate Area, Square Feet.....	1½	1¾	2¼	3	3¾
Shipping Weight Lbs.....	1,065	1,125	1,326	1,558	1,910

*Hot water coil for domestic purposes may be had in all sizes.
See Price List for prices.*



New Peninsular Warm Air Circulator

Series 18B - 20B - 22B - 24B

Especially adapted to burn Soft Coal but will burn any kind of fuel

Construction Features



Extra Large Ash Pit



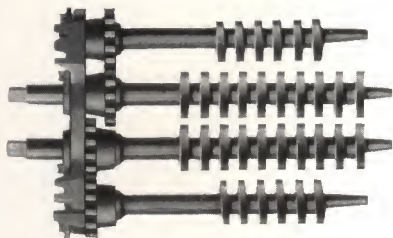
One-Piece Base

With the one-piece base and the deep cup joints that are filled with cement, when set makes as tight a joint as if welded, there is no possibility of gas escaping into the warm air chamber and thence up into the house. The ash pit is exceptionally deep and roomy, which allows free circulation of air.

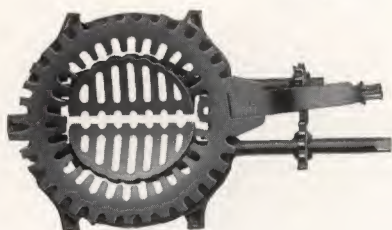


Triangular Bar Grate

The Triangular Bar Grate used in this series positively eliminates waste of coal—sifting is unnecessary. It prevents the formation of clinkers and causes no dust. This grate is composed of triangular bars with teeth close together to allow burning of small coal, but yet not too close to retard the draft. Their triangular form gives them two cooling surfaces in the ash pit and in their revolution three different surfaces in alternation are exposed to the fire, preventing the bars from warping. Always have the flat end of shaker bar up when running fire as this keeps the grates right. To remove grate, one bar at a time if desired, a cotter pin is all that has to be removed.



Duplex Grate



The duplex grate may also be furnished with this series. It simply slides in the ash pit on the tracks on either side of the ash pit.

Two-Piece Fire Pot



Peninsular fire pots are made in two sections so as to take care of the expansion and contraction that is necessarily the greatest at this point as this is where the greatest heat is.





Peninsular Feed Section

Is a heavy, dome-shaped casting of uniform thickness, ribbed to add strength and to increase the heat-radiating surface.

Note the large opening at top of feed section. The ribs on this feed section are not mere corrugations, like on most circulators, but are one inch thick at the top where the point of greatest heat is, insuring double strength.



All-Cast Radiator

This large Peninsular Radiator is of the circulating type with an extra long fire travel, the purpose of which is to extract more heat from the hot gases before they are drawn up the chimney. The hot gases enter the wide dome and are divided into two bodies that pass to each side of the radiator. For cleaning, you merely open the door.

By making the Peninsular Radiator in two pieces it is possible to turn out an even thickness casting that will last longer, as well as one that is smooth on the inside. This can not be done with a one-piece radiator.

Soot and ashes will not insulate a smooth casting so readily as one that is rough on the inside. You will appreciate more what this means when you realize that one-sixteenth inch of soot coating reduces the heating efficiency of a casting 10%.





Peninsular All-Cast Iron Warm Air Circulator

Series 18B - 20B - 22B - 24B

Made in Four Sizes and Cast Radiator Only

ITEM	18B	20B	22B	24B
Inside Diameter of Fire Pot at Top	18"	20"	22"	24"
Depth of Fire Pot	10 $\frac{1}{2}$ "	11 $\frac{3}{4}$ "	12 $\frac{1}{4}$ "	13 $\frac{1}{2}$ "
Inside Diameter of Fire Pot at Grate	14 $\frac{5}{8}$ "	17"	19"	20"
Diameter of Radiator	29"	32"	34"	38"
Height of Radiator	10"	10 $\frac{1}{2}$ "	11 $\frac{1}{2}$ "	13"
Height of Circulator	48 $\frac{1}{2}$ "	49 $\frac{1}{2}$ "	51 $\frac{1}{2}$ "	52"
Diameter of Casing	35 $\frac{1}{2}$ "	37"	40"	44"
Height of Casing	58"	59"	62"	64"
Diameter of Smoke Collar	8"	8"	9"	9"
Heating Capacity, Cubic Feet	11,000	15,000	20,000	26,000
Heating Capacity, Sq. Inches Pipe Area	280	360	430	550
Size of Feed Door	11 $\frac{1}{4}$ x11 $\frac{1}{4}$ "	12 $\frac{1}{2}$ x11"	12 $\frac{1}{2}$ x14"	12 $\frac{1}{2}$ x14"
Grate Area, Square Feet	1 $\frac{1}{2}$	1 $\frac{3}{4}$	2 $\frac{1}{4}$	2 $\frac{3}{4}$
Shipping Weight	751	910	1,050	1,250

*Hot water coil for domestic purposes may be furnished
See Price List for prices*

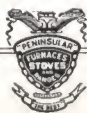


How a Peninsular Warm Air Circulator Looks with the Galvanized Casing On



Note the cone-shaped hood which acts as a "robber" for every pipe. There is no dead air space in the Peninsular Hood.

All Galvanized Casings on Peninsular Warm Air Circulators are made of 26 gauge iron and lined with asbestos and corrugated iron.



Peninsular Warm Air Circulator

Series 6136, 6140, 6144, 6148, 6154, 6160 have Cast Radiator

Series 636, 640, 644, 648, 654, 660 have Steel Radiator

A Low Priced Furnace, but Peninsular in Every Respect

Construction Features

Heavy cast iron base cast in one piece. Extra large ash pit.



Fire Pots

Are made in two sections. Walls are very straight, and pots themselves very deep. These sections are joined by means of deep, wide cup joints, which amply allow for expansion and contraction and offer a perfect bed for the asbestos cement.

Steel Radiator on 636 Series

Has no cold or inactive radiating surfaces. All the heat units are brought in contact with an outside surface. Its construction is such that it permits a continuous flow of air in large volumes to come in contact with the heated radiating surfaces. The products of combustion enter the radiator from the front of the furnace from either side, and must pass around the entire radiator before passing into the chimney flue.





Peninsular All Cast Warm Air Circulator

Series 6136 - 6140 - 6144 - 6148 - 6154 - 6160

Built especially for Soft Coal. Will burn Hard Coal, Coke, Wood or Natural Gas with equal success

This Circulator is furnished with the Anti-Clinker Bar Grate only

ITEM	6136	6140	6144	6148	6154	6160
Inside Diameter Fire Pot at Top	16"	18"	20"	22"	24"	27"
Depth Fire Pot	10"	10½"	11¾"	12¼"	13½"	13¼"
Inside Diameter Fire Pot at Grate	13"	14⅝"	17"	19"	20"	23"
Diameter Radiator	25"	29"	32"	34"	38"	40"
Height Radiator	9"	10"	10½"	11½"	13"	15"
Height of Circulator	43"	48½"	49½"	51"	52"	54"
Diameter of Casing	32"	35½"	37"	40"	44"	47"
Height of Casing	56"	58"	59"	62"	64"	67"
Diameter Smoke Collar	7"	8"	8"	9"	9"	9"
Heating Capacity, Square Inches Pipe Area	132	280	360	430	550	625
Heating Capacity, Cu. Ft.	7,000	11,000	15,000	20,000	26,000	33,000
Size Feed Door	8x10½	8½x11½	8½x11¾	8½x12	9½x13	9½x13
Grate Area, Square Feet	1½	1½	1¾	2¼	2¾	3
Shipping Weight	635	720	775	900	1118	1,300

*Hot water coil for domestic purposes may be furnished
See Price List for prices*





Peninsular Warm Air Circulator

Series 636 - 640 - 644 - 648 - 654 - 660

*Built especially for Hard Coal, Coke, Wood or Natural Gas
This Circulator is furnished with the Anti-Clinker Bar Grate only*

ITEM	636	640	644	648	654	660
Inside Diameter Fire Pot at Top	16"	18"	20"	22"	24"	27"
Depth Fire Pot	10"	10½"	11¾"	12¼"	13½"	13¼"
Inside Diameter Fire Pot at Grate	13"	14⅝"	17"	19"	20"	23"
Diameter Radiator	25"	29"	32"	34"	38"	40"
Height Radiator	9"	10"	10½"	11½"	13"	15"
Height Circulator	44"	48½"	49½"	51"	52"	54"
Diameter Casing	32"	35½"	37"	39½"	44"	47"
Height Casing	56"	58"	59"	62"	64"	67"
Diameter Smoke Collar	7"	8"	8"	9"	9"	9"
Heating Capacity, Cu. Ft.	7,000	11,000	15,000	20,000	26,000	33,000
Heating Capacity, Square Inches Pipe Area	132	280	360	430	550	625
Size Feed Door	8x10½	8½x11½	8½x11¾	8½x12	9½x13	9½x13
Grate Area, Square Feet	1	1½	1¾	2¼	2¾	3
Shipping Weight	635	720	775	900	1,118	1,300

*Hot water coil for domestic purposes may be furnished
See Price List for prices*



The Peninsular System of Sanitary Room Heating and Ventilation

**For Schools, Churches and Halls
No Basement Needed**



The Peninsular System of Heating and Ventilation of School Rooms

First—Supplies to each child an abundance of pure, fresh air.

Second—Removes from the room all the foul and cold air.

Third—Saves the doctor's bills, as it does away with poisonous air and cold drafts, which cause headaches, colds and coughs.

Fourth—Adds fully twenty-five per cent to the efficiency of the school, as teacher and pupils can do more and better work under Sanitary Ventilation.

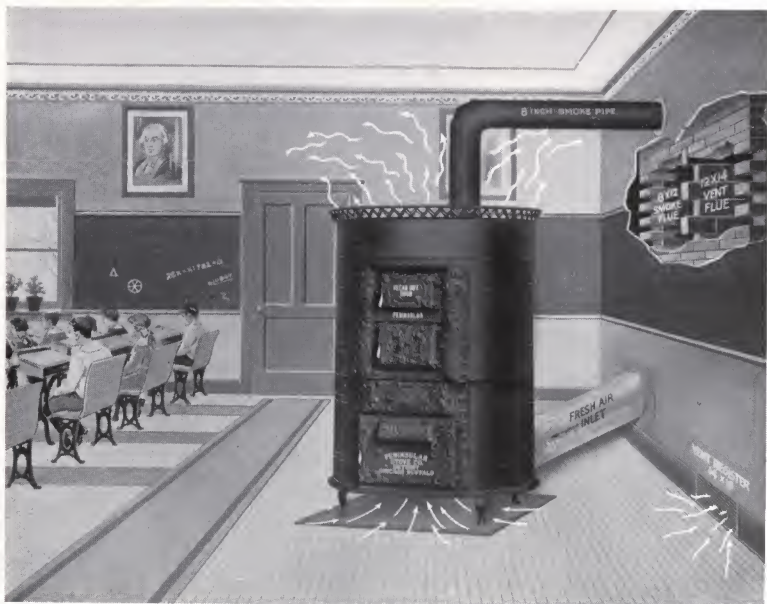
Fifth—Saves fuel.

Sixth—Does away with cold floors—allows seating of children right next to heater.

Seventh—Is an investment that pays large annual dividends to the taxpayers of the district in

Better Health of the Children;
A More Efficient School;
Greater Economy in Running Expenses.





The Peninsular System of School Room Heating and Ventilating

The above illustration shows the method of installing the Peninsular Room Heater where a double flue is provided, one for the smoke and one for foul air, having a register at the floor line.

The Arrows show how the cold air passes through the casing about the furnace, mingling with the incoming fresh air, how this warm, pure air passes out at the top of the heater and flows into every part of the room, how the foul air is extracted through the Vent Register up the chimney vent flue.

The circulation is constant, rapid and complete; it floods the room in every corner with pure outdoor air, rich in oxygen and warmed to the right temperature. This is the only system that is now permissible to use in most states.

See Price List for price.





The Peninsular Room Heater

Series 6136 - 6140 - 6144 - 6148 - 6154 - 6160

The 18B Series May Also Be Used for Heating Large Halls, Churches, Schools and Stores When a Ventilating System Is Not Desired

All Styles and Sizes of Peninsular Warm Air Circulators are made in Room Heaters as Illustrated. The Prices of Jackets are the same as the Regular Casing

ITEM	6136	6140	6144	6148	6154	6160
Inside Diameter Fire Pot at Top	16"	18"	20"	22"	24"	27"
Depth of Fire Pot	10"	10½"	11¾"	12¼"	13½"	13¼"
Inside Diameter Fire Pot at Grate	13"	14½"	17"	19"	20"	23"
Diameter of Casing	32"	35½"	37"	39½"	44"	47"
Height of Circulator	43"	48"	50"	51"	52"	53"
Size of Feed Door	8x10½	8½x11½	8½x11¾	8½x12	9½x13	9½x13
Heating Capacity, Cubic Feet	9,000	13,000	17,000	23,000	28,000	35,000
Shipping Weight	735	820	885	1,000	1,218	1,400
Heating Capacity, Square Inches Pipe Area when Used as Room Heater	170	350	450	540	670	780

If wanted with Foul Air Remover add (see price list)
See Price List for prices.





View showing installation of the Improved Peninsular Pipeless Furnace System

The Peninsular Pipeless Furnace System of Home Warming and Ventilating

*Burns any kind of fuel—Soft Coal, Hard Coal, Wood,
Coke or Natural Gas*

This new Peninsular Pipeless Furnace System requires no piping, can be placed in any new or old home, quickly and easily, and produces a big volume of warm air.

This system besides being ideal for homes is just the system for churches, schools, halls and stores. The following advantages in using a Peninsular Pipeless System are wonderful in themselves:

Most Important—Actual test of Peninsular Registers shows that the ordinary pipeless systems have an inefficient air supply. You will find the Peninsular with from 30 to 50 per cent additional air supply, as compared to the ordinary pipeless systems which construction insures a much longer lived heating system.

(1) can be installed in old buildings, (2) keeps fire over night, (3) drafts regulated from living room, (4) cool basement for storing fruits, vegetables, meats etc., (5) keeps entire house to an even temperature, (6) makes warm bedrooms, if wanted, (7) takes up only small space in cellar, (8) has large double fuel door 12½ x 14 in., (9) can be installed in low basement, 6 ft., (10) burns any kind of fuel, (11) easy to take care of, (12) puts moisture into the air by its large humidifier water pan placed in a convenient position for filling.



In the Peninsular Pipeless Furnace we have to offer you one of those rare articles that have met with the popular approval of the buying public—one which carries with it a profit only found with real specialties.

How It Heats

The Peninsular Pipeless heating system is based on two principles of the law of gravity. First, that warm air rises. Second, that cold air falls.

The question may come to your mind as to how this furnace can heat any part of the house besides the room that contains the register. This is easily understood when you take into consideration the average size of warm air pipes (10 inches) used on a pipe furnace.

The area of a 10-inch pipe is approximately one-half of one square foot. One of these pipes leads to each room to be heated. Thus, all the heat that is conveyed into each room must come through one of these small pipes.

But, with the Peninsular Pipeless system of heating all of the heat is passed through one large pipe and emptied into a room centrally located. From this room the heated air finds its level, just as water does, and flows from the room in which the register is located through large door openings having an area of 17 sq. ft. or 35 times as large as the 10-inch pipe opening.

The Peninsular Pipeless system of heating and ventilating is easy to operate—nothing to get out of order. It may be easily and conveniently installed in old houses in **LESS THAN EIGHT HOURS.**

Demand

Pipeless furnaces have now been successfully used for 10 years by people in every walk of life and in all states of the union. As a result, the demand by the people for the winter comfort which they are entitled to and can surely get with a Peninsular Pipeless Furnace, the dealers' sales have been increasing year by year.

Don't hire any extra help to handle this business. Use your present force.

Sell Them Like Stoves

The exclusive Peninsular Agency is worth money to you

Hundreds of furnace dealers, men who have learned from their years of practical experience to recognize at a glance the quality in furnace construction that guarantees satisfaction, have quickly attached their names to the rapidly growing list of exclusive Peninsular agents.

Get lined up now on this proposition. Write us for our complete selling plans, which include our service and co-operation policy.





One of Several Rows of Houses in South Bend, Ind., Heated with 10B Pipeless Furnaces



Kansas City, Kan., Nov. 20, 1920
F. S. GOEBEL F. & C. Co.,

Gentlemen:—We have had our Peninsular Pipeless Furnace two winters and we cannot say too much for it as it heats our house comfortably all through on a surprisingly small amount of fuel. My daughter next door had you install one in her house and she feels the same as we do. Would not take ten times its cost and be without it.

Wishing the best of success with the Peninsular Pipeless Furnace, We remain
MRS. QUILTY, 2409 Orville.

Mattoon, Ill., Oct. 29, 1920
PENINSULAR STOVE CO.,

Gentlemen:—Last fall The Mattoon Buggy & Implement Co. installed in our home a Peninsular Pipeless Furnace. We are heating every room in the house to our entire satisfaction. In fact, we are more than pleased with it, and we would not be without it for any price. Before we had a Pipeless Furnace we used a stove with which we could not heat the entire house although we used as much fuel as we now use to heat the entire house. Yours truly,

G. V. TROXEL,
2512 Pine Ave., Mattoon, Ill.



Friendship, N. Y., Feb. 22, 1921
PENINSULAR STOVE CO.,

Dear Sirs:—J. R. Wetherby, a neighbor of mine, has one of your Pipeless Furnaces in his house and it works the best of any I know of in town. I am going to build one or two bungalows this summer. I am a carpenter and plumber and can handle some of your furnaces if the prices are right. Will take the agency in this town if you want me to. It is pretty late to put in many this spring. There are a number of prospects here now. Please send the lowest price that can be had on your furnaces.

House in Royal Oak, Mich., Heated with 9B Pipeless

Yours, O. R. STILLMAN.





Kansas City, Kansas,
November 16, 1920.

GLOBE FURNITURE COMPANY,
Kansas City, Kansas.

Gentlemen:—This is the second winter for our pipeless furnace and it has been giving such good results that we are very much pleased with it.

We had contemplated for a number of years having a furnace put in our home, but the house was of the old style architecture built some years ago, with walls of solid brick. When we took up the question of having a furnace installed, we learned it would be practically impossible to install an ordinary pipe furnace because of these solid walls. This same condition proved true with the steam and hot water furnaces, in which case the pipes would have been placed in conspicuous places throughout the house.

The pipeless furnace seemed to be the only solution for our problem, and it has proven to be a very good one.

Very truly yours,

(Signed) MRS. FRED SORTOR.
(No. 12B pipeless furnace in this house).



Kansas City, Kansas,
December 12, 1920.

F. S. GOEBEL FURN. Co.,
Kansas City, Kansas.

Gentlemen:—When you installed a Peninsular Pipeless Furnace in our store we were in doubt as to results. But after trying same out during the very coldest weather we find that this furnace heats our two salesrooms very evenly and we can keep any degree of temperature desired in both rooms. We find the fuel consumption much less than when we were using stoves. And, of course, we have a very much better heated store, the heat being evenly distributed to all parts.

F. A. CROWLEY.



THE PENINSULAR STOVE CO.,
Detroit, Mich.

Gentlemen:—We are pleased to recommend the Peninsular Pipeless Furnace which you installed in our home last year. Our home has ten large rooms, two bathrooms and two large halls. We have good comfortable heat in all the rooms during the very coldest weather.

The one room that we were in doubt about was the sleeping porch on the extreme back of the house on the second floor. This was heated very nicely, in fact, I used it as a sewing room during the cold weather.

We used less coal by far last year than we did the year before when we tried to heat the house with a pipe furnace.

Yours truly,
MRS. C. J. JASPER.



Gentlemen:—You ask us how we liked our Peninsular Pipeless Furnace, and we cannot say too much for it as we heat our home on the same amount of coal that we formerly used in a No. 18 hot blast and a kitchen range, and our home is heated comfortably all over which contains nine rooms.

We have used our furnace two winters and we recommend it to all friends, as you know by the many prospects we have sent you.

Hoping you the best of success as you certainly have a good furnace,

We remain,

MR. S. A. JACKSON.



Mattoon, Ill.,

October 29, 1920.

THE PENINSULAR STOVE CO.,

Gentlemen:—In 1918 The Mattoon Implement & Buggy Co. installed in our 9-room house a Peninsular Pipeless Furnace. We had previously used hot water heat which cost us to heat our home \$150.00 per year. In 1918, which was a mild winter, we used 7 ton of soft coal which cost \$38.50. In 1919, which was a long, cold winter, we used 9 ton of soft coal which cost \$54.00.

We are heating our home better than we ever heated it before. Every room is warm and we are very well pleased with it.

Yours respectfully,

MRS. JOHN TROTT,

2717 Western Ave.,

Mattoon, Ill.

(Mr. Trott is Illinois Central Pas. Conductor; has been in service 35 years.)



Brownstown, Illinois,

January 31, 1920.

PENINSULAR STOVE CO.,

Chicago, Ill.

Gentlemen:—I have in my home (a 7-room house, five downstairs, and two upstairs), one of your Peninsular 10B Pipeless Furnaces and am exceptionally well pleased with it and have had no trouble with it in any way. It is very economical in consumption of fuel and heats the house at an even temperature no matter how cold it is out.

I would recommend it as good a furnace as money could buy.

Yours truly,

CHARLES E. REETER

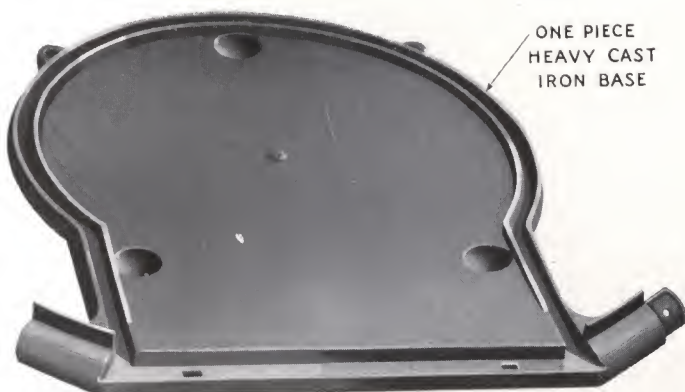


A Miracle Worker—The New and Improved Peninsular Pipeless Furnace

Series 9B - 10B - 11B - 12B

Heats the entire house through one Register and keeps the basement cool. Burns any kind of fuel, soft coal, hard coal, wood, coke or natural gas.

Construction Features



*One Piece, Heavy Cast Iron Base Used in Peninsular
Warm Air Circulators*

Note the Very Deep Cup Joints



Extra Large Ash Pit

The Peninsular Ash Pit and Grates

An important feature of this series is the ash pit; its extra size insures a good hot fire. If your ash pit is small and cramped you can not get the proper supply of air so necessary for a good fire.





Two-Piece Fire Pot

Peninsular Fire Pots are built heavy enough to withstand hard usage but not so heavy as to interfere with the free conduction of heat through them. They are extra deep, so that large fires can be carried, enabling users to realize constant heat and save fuel. Are perpendicular in form and made in two sections to prevent cracking. The hottest part of the fire is in the center of the pot. At this point the greatest expansion and strain on the castings takes place. The special Peninsular expansion joints used on all Peninsular furnaces increase the life of its furnaces.



Feed Section

Is heavily ribbed and bell shaped, which insures perfect combustion. The opening at the top of the feed section is so large that it does not retard the draft. A water coil pocket is cast in the feed door neck which does not take away from the size of the door.





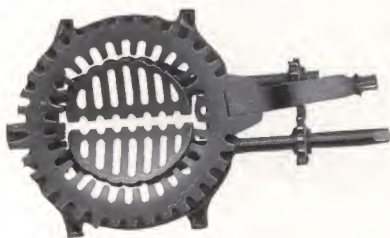
Peninsular All-Cast Radiator

This large Peninsular Radiator is of the circulating type with an extra long fire travel, the purpose of which is to extract more heat from the hot gases before they are drawn up the chimney. The hot gases enter the wide dome and are divided into two bodies that pass to each side of the radiator. For cleaning, you merely open the door.

By making the Peninsular Radiator in two pieces it is possible to turn out an even thickness casting that will last longer, as well as one that is smooth on the inside. This can not be done with a one-piece Radiator.

Soot and ashes will not insulate a smooth casting so readily as one that is rough on the inside. You will appreciate more what this means when you realize that one-sixteenth inch of soot coating reduces the heating efficiency of a casting 10%.

Large double feed door measures $12\frac{1}{4} \times 14$, which enables the user to throw in extra large knots of wood and chunks of coal.



Duplex Grate

This series of circulators may also be furnished with a duplex grate; the shaking from side to side of the Annular Ring cleans out the ashes around the outer edge and the dump in the center is easily opened up and all clinkers fall through.



If you have spent hours in putting on balky casing rings on pipeless furnaces—rings *made in one piece*—when the job should only have taken a few minutes, you will appreciate the great value of Peninsular special adjustable casing rings.

Every Peninsular Pipeless Furnace equipped with the exclusive Peninsular rings.



Adjustable in a minute's time—makes casings stay together and air-tight

The ring is put on the casing loose and after all adjusted tightened up, and as a further guard against either the inner or outer hood slipping off of the ring there are six bolts and nuts that come in both the inner and outer center casing ring so it may be bolted to the top and casing, so with the adjustable casing ring and the sets of bolts when the furnace is mounted it is up to stay.

The Peninsular Water Coil

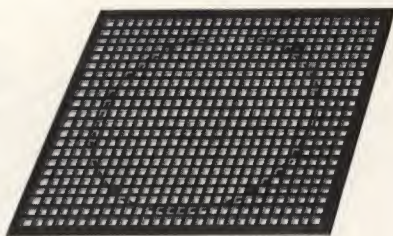


Every one appreciates the value of hot water. The owner of a Peninsular Pipeless Furnace whose home is equipped with a water system, may obtain an abundant supply of hot, running water for domestic use by the use of the Peninsular Water Coil.

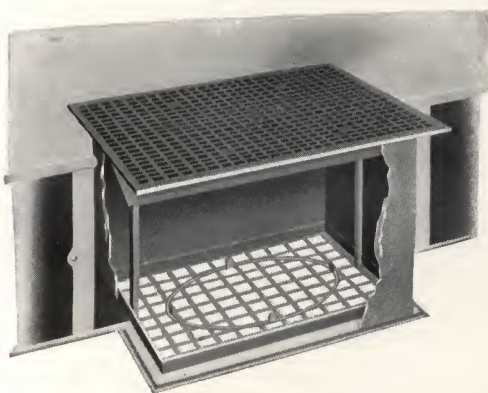


Duplex Floor Register

Furnished with all Peninsular Pipeless Furnaces is a combination return air intake and warm air outlet. The warm air rises through the circular inside portion direct from the furnace. The other section admits the return air to the insulated outer casing, where it is drawn to the bottom of the heater. There it comes in direct contact with hot radiating surfaces, is heated and rises through the center of the register to recirculate through the building.



Peninsular Pipeless registers are one size larger than are ordinarily used, so as to admit a large volume of warm air through the register at a slow speed. When small registers are used the heated air rises so rapidly that it causes a draft on the floor by the cold air returning to the register. With the Peninsular large register this is impossible.

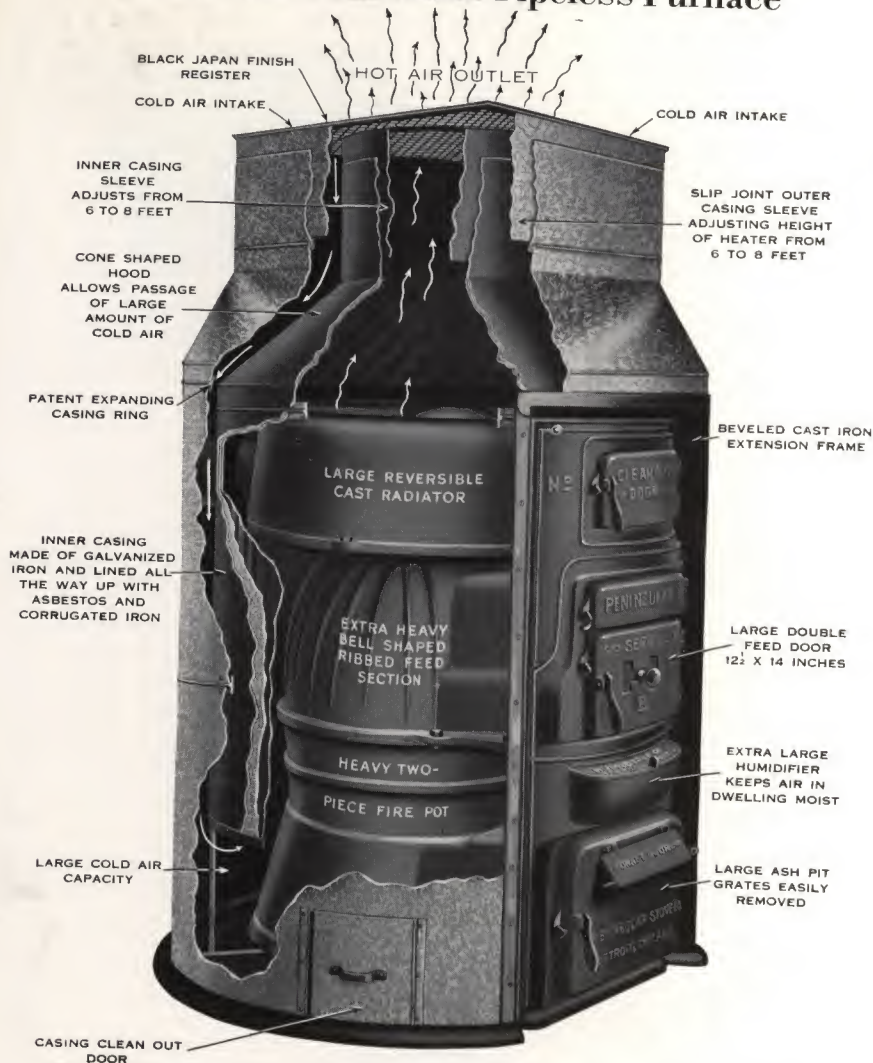


Adjustable Ceiling Ventilators may be used to allow heat to go into second floor rooms when the doors are closed. Illustration shows method of installation. These ventilators do not come as regular equipment; if desired, should be ordered special.

All Peninsulars are shipped with adjustable collars between casing and register, so that they can be installed in any basement from 6 to 8 feet. For greater height extra size casings can be furnished.



Sectional Cut Showing the Wonderful Points of the New Peninsular Pipeless Furnace



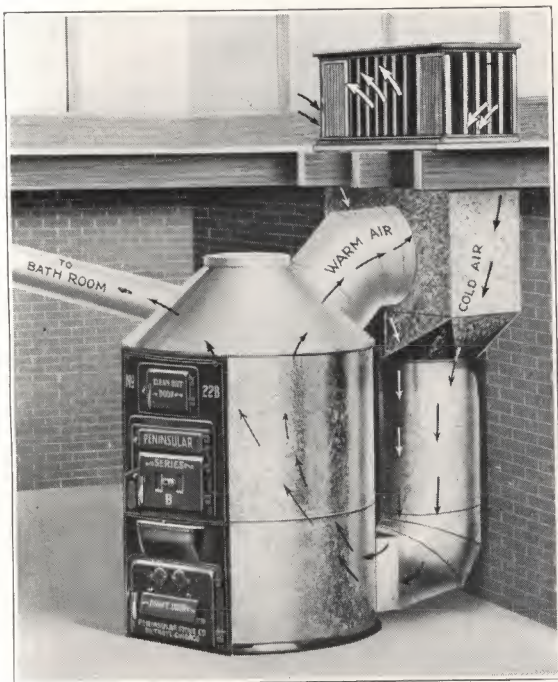
ITEM	9B	10B	11B	12B
Inside Diameter of Fire Pot at Top.....	18"	20"	22"	24"
Depth of Fire Pot.....	10 1/2"	11 3/4"	12 1/4"	13 1/4"
Inside Diameter of Fire Pot at Grate.....	14 5/8"	17"	19"	20"
Diameter of Radiator.....	29"	32"	34"	38"
Height of Radiator.....	10"	10 1/2"	11 1/2"	12 1/2"
Diameter of Inside Casing.....	36"	38"	40"	44"
Diameter of Outside Casing.....	44"	46"	48"	52"
Diameter of Smoke Collar.....	8"	8"	9"	9"
Size of Feed Door.....	11 1/4 x 11 1/4"	12 1/2 x 11 1/2"	12 1/2 x 14"	12 1/2 x 14"
Size of Register.....	28 x 32"	27 x 35"	35 x 35"	40 x 40"
Size of Warm Air Pipe.....	20"	22"	26"	30"
Height of Casing.....	6' to 8'	6' to 8'	6' to 8'	6' to 8'
Square Feet Grate Surface.....	1 1/2	1 3/4	2 3/4	3
Heating Capacity, Cubic Feet.....	13,500	18,000	25,000	32,000
Heating Capacity, Sq. Inches Pipe Area.....	350	450	540	670
Shipping Weight.....	980	1,100	1,325	1,600

Hot water coil for domestic purposes may be furnished.
See Price List for prices.



The Peninsular One Pipe Heater

May be used with any Peninsular Heater



Showing Heater Installed in Basement

A regular furnace and casing is used and connected up to this register. With this system it is very easy to run a pipe to a bath room or room a long distance from the furnace. The registers come in Oak and Mahogany finish, and in 15", 18", 20", 24" sizes.

See Price List for Price of Register and Boot

The curved diffuser in the warm air compartment throws the heat out into the room evenly. The cold air is returned to the furnace through the compartment at each end of the register. It is usually located against an inside wall but it can be placed on an outside wall under a window and operate very successfully, built into a colonade or partition or serve as a base for a book case.



Measurements of Galvanized Iron Casings for Peninsular Warm Air Circulators

These sizes of casings are the correct measurements of circumferences, not allowing for laps or edges, for riveting and grooving	Lower Galvanized Casing	Center Galvanized Casing	Upper Galvanized Casing
8840 Peninsular			
Iron recommended.....	26 gauge	26 gauge	26 gauge
Height.....	20 $\frac{1}{2}$ "	26"	12"
Circumference, less lap...	9' 9 $\frac{1}{4}$ "	10' 7 $\frac{3}{4}$ "	10' 7 $\frac{3}{4}$ "
8844 Peninsular			
Iron recommended.....	26 gauge	26 gauge	26 gauge
Height.....	19 $\frac{1}{2}$ "	30"	12"
Circumference, less lap...	9' 9 $\frac{1}{4}$ "	11' 1 $\frac{3}{4}$ "	11' 1 $\frac{3}{4}$ "
8848 Peninsular			
Iron recommended.....	26 gauge	26 gauge	26 gauge
Height.....	19 $\frac{1}{2}$ "	30"	12"
Circumference, less lap...	10' 5 $\frac{1}{4}$ "	11' 11 $\frac{1}{2}$ "	11' 11 $\frac{1}{2}$ "
8854 Peninsular			
Iron recommended.....	26 gauge	26 gauge	26 gauge
Height.....	20 $\frac{1}{2}$ "	30"	12"
Circumference, less lap...	11' 11 $\frac{5}{8}$ "	13' 4 $\frac{7}{8}$ "	13' 4 $\frac{7}{8}$ "
9940 Peninsular			
Iron recommended.....	26 gauge	26 gauge	26 gauge
Height.....	20 $\frac{1}{2}$ "	28"	12"
Circumference, less lap...	9' 9 $\frac{1}{4}$ "	10' 7 $\frac{3}{4}$ "	10' 7 $\frac{3}{4}$ "
9944 Peninsular			
Iron recommended.....	26 gauge	26 gauge	26 gauge
Height.....	19 $\frac{1}{2}$ "	30"	12"
Circumference, less lap...	9' 9 $\frac{1}{4}$ "	11' 1 $\frac{3}{4}$ "	11' 1 $\frac{3}{4}$ "
9948 Peninsular			
Iron recommended.....	26 gauge	26 gauge	26 gauge
Height.....	19 $\frac{1}{2}$ "	30"	12"
Circumference, less lap...	10' 5 $\frac{1}{4}$ "	11' 11 $\frac{1}{2}$ "	11' 11 $\frac{1}{2}$ "
9954 Peninsular			
Iron recommended.....	26 gauge	26 gauge	26 gauge
Height.....	20 $\frac{1}{2}$ "	30"	14"
Circumference, less lap...	11' 11 $\frac{5}{8}$ "	13' 4 $\frac{7}{8}$ "	13' 4 $\frac{7}{8}$ "
9960 Peninsular			
Iron recommended.....	24 gauge	24 gauge	24 gauge
Height.....	27"	28"	14"
Circumference, less lap...	13' 8 $\frac{1}{2}$ "	15' 5 $\frac{3}{8}$ "	15' 5 $\frac{3}{8}$ "



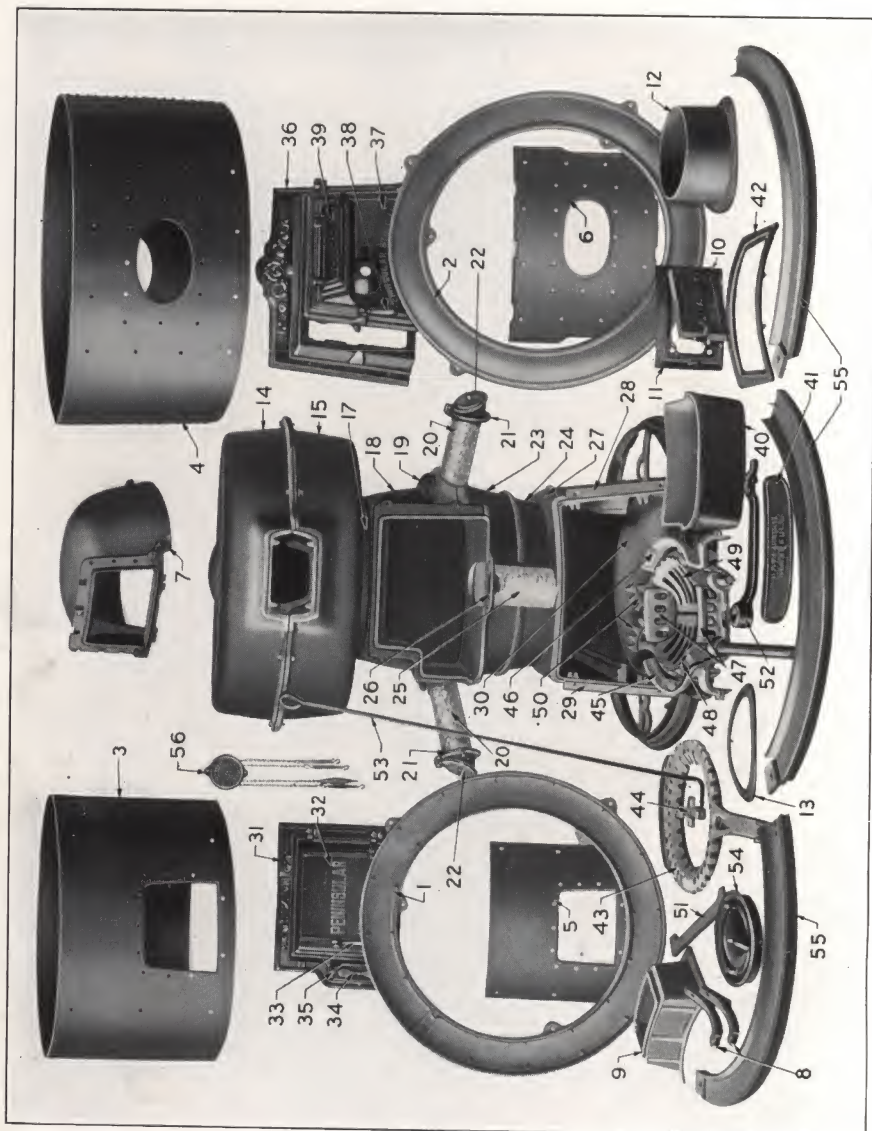
Measurements of Galvanized Iron Casings for Peninsular Warm Air Circulators

These sizes of casings are the correct measurements of circumferences, not allowing for laps or edges, for riveting and grooving	Lower Galvanized Casing	Center Galvanized Casing	Upper Galvanized Casing
636 and 6136 Peninsular			
Iron recommended.....	26 gauge	26 gauge	26 gauge
Height.....	20"	21½"	12"
Circumference, less lap...	7' 5⅝"	7' 5⅝"	8' 4⅜"
640 and 6140 Peninsular			
Iron recommended.....	26 gauge	26 gauge	26 gauge
Height.....	24"	21"	12"
Circumference, less lap...	7' 11"	7' 11"	9' 4"
644 and 6144 Peninsular			
Iron recommended.....	26 gauge	26 gauge	26 gauge
Height.....	24"	22"	12"
Circumference, less lap...	8' 2¾"	8' 2¾"	9' 9⅝"
648 and 6148 Peninsular			
Iron recommended.....	26 gauge	26 gauge	26 gauge
Height.....	25½"	22"	12"
Circumference, less lap...	8' 8½"	8' 8½"	10' 5⅞"
654 and 6154 Peninsular			
Iron recommended.....	26 gauge	26 gauge	26 gauge
Height.....	24"	26"	14"
Circumference, less lap...	9' 8"	9' 8"	11' 6¾"
660 and 6160 Peninsular			
Iron recommended.....	26 gauge	26 gauge	26 gauge
Height.....	24"	26"	14"
Circumference, less lap...	10' 1¾"	10' 1¾"	12' 3¼"
18B Peninsular			
Iron recommended.....	26 gauge	26 gauge	26 gauge
Height.....	24"	21"	12"
Circumference, less lap...	7' 11"	7' 11"	9' 4"
20B Peninsular			
Iron recommended.....	26 gauge	26 gauge	26 gauge
Height.....	24"	22"	12"
Circumference, less lap...	8' 2¾"	8' 2¾"	9' 9⅝"
22B Peninsular			
Iron recommended.....	26 gauge	26 gauge	26 gauge
Height.....	25½"	22"	12"
Circumference, less lap...	8' 8½"	8' 8½"	10' 5⅞"
24B Peninsular			
Iron recommended.....	26 gauge	26 gauge	26 gauge
Height.....	24"	26"	14"
Circumference, less lap...	9' 8"	9' 8"	11' 6¾"



No. 8840-No. 9940 Series Furnace Sectional Parts

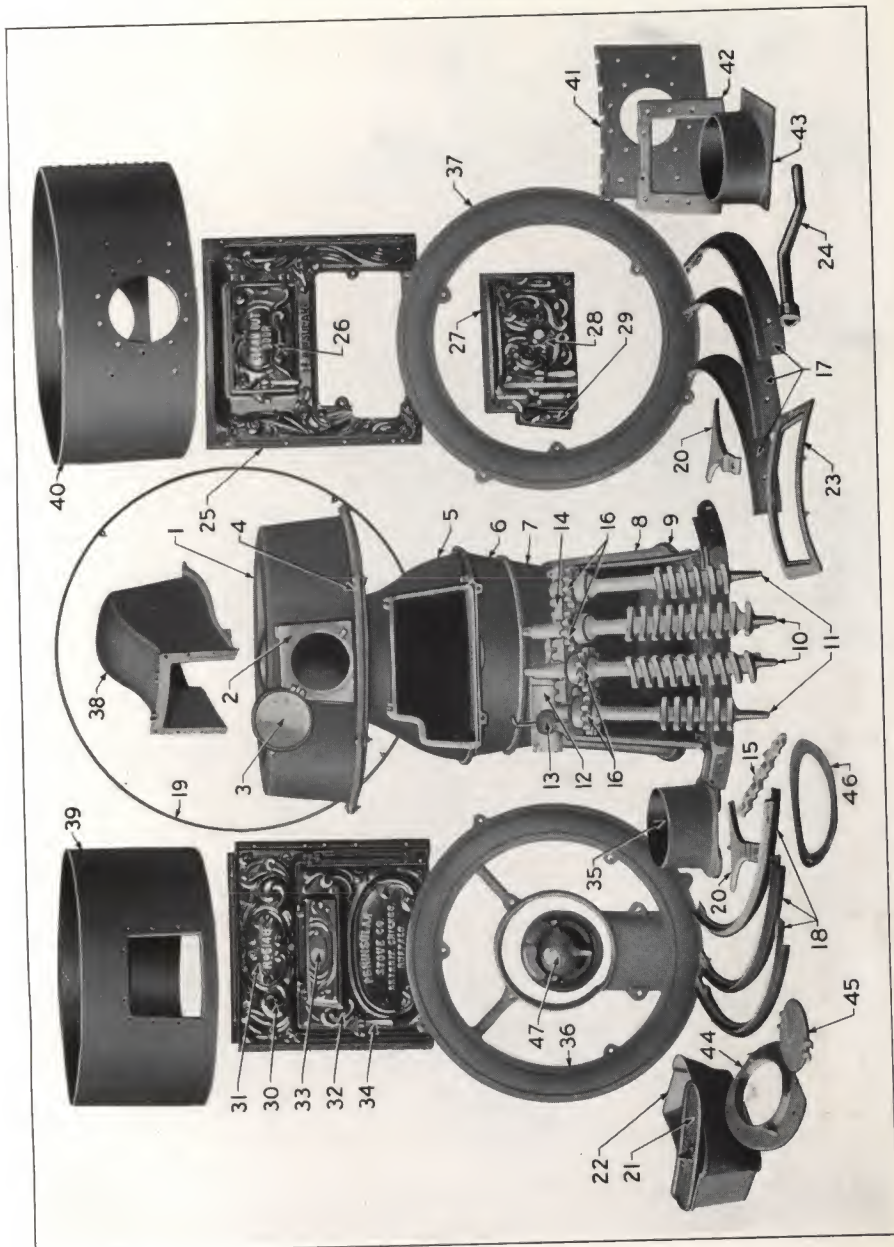
- 1—Radiator top for steel radiator.
- 2—Radiator bottom for steel radiator.
- 3—Inner steel.
- 4—Outer steel.
- 5—Combustion dome lining.
- 6—Front steel radiator lining.
- 7—Combustion dome for steel rod.
- 8—Combustion dome braces.
- 9—Clean out frame.
- 10—Clean out door.
- 11—Smoke pipe collar.
- 12—Smoke pipe collar ring.
- 13—Upper half cast radiator.
- 14—Lower half cast radiator.
- 15—Feed section.
- 16—Feed section.
- 17—Hot blast ring.
- 18—Hot blast pipes.
- 19—Inake frame for hot blast.
- 20—Inake frame for hot blast.
- 21—Upper fire pot.
- 22—Lower fire pot.
- 23—Dust flue.
- 24—Dust flue damper.
- 25—Ash pit top.
- 26—Ash pit side ash pit.
- 27—Left side ash pit.
- 28—Ash pit bottom.
- 29—Feed door frame.
- 30—Feed door.
- 31—Feed door handle.
- 32—Water front.
- 33—Coll plate.
- 34—Ash pit front.
- 35—Ash pit door.
- 36—Ash pit door handle.
- 37—Ash pit door on ash pit door.
- 38—Water pan.
- 39—Water pan cover.
- 40—Water pan frame.
- 41—Annular shaking ring clumps.
- 42—Annular shaking ring balls.
- 43—Annular shaking ring balls.
- 44—Grate frame.
- 45—Duplex grate caps.
- 46—Long half duplex grate.
- 47—Short half duplex grate.
- 48—Shaker.
- 49—Poker.
- 50—Cheek damper.
- 51—Center casting ring.
- 52—Regulator.

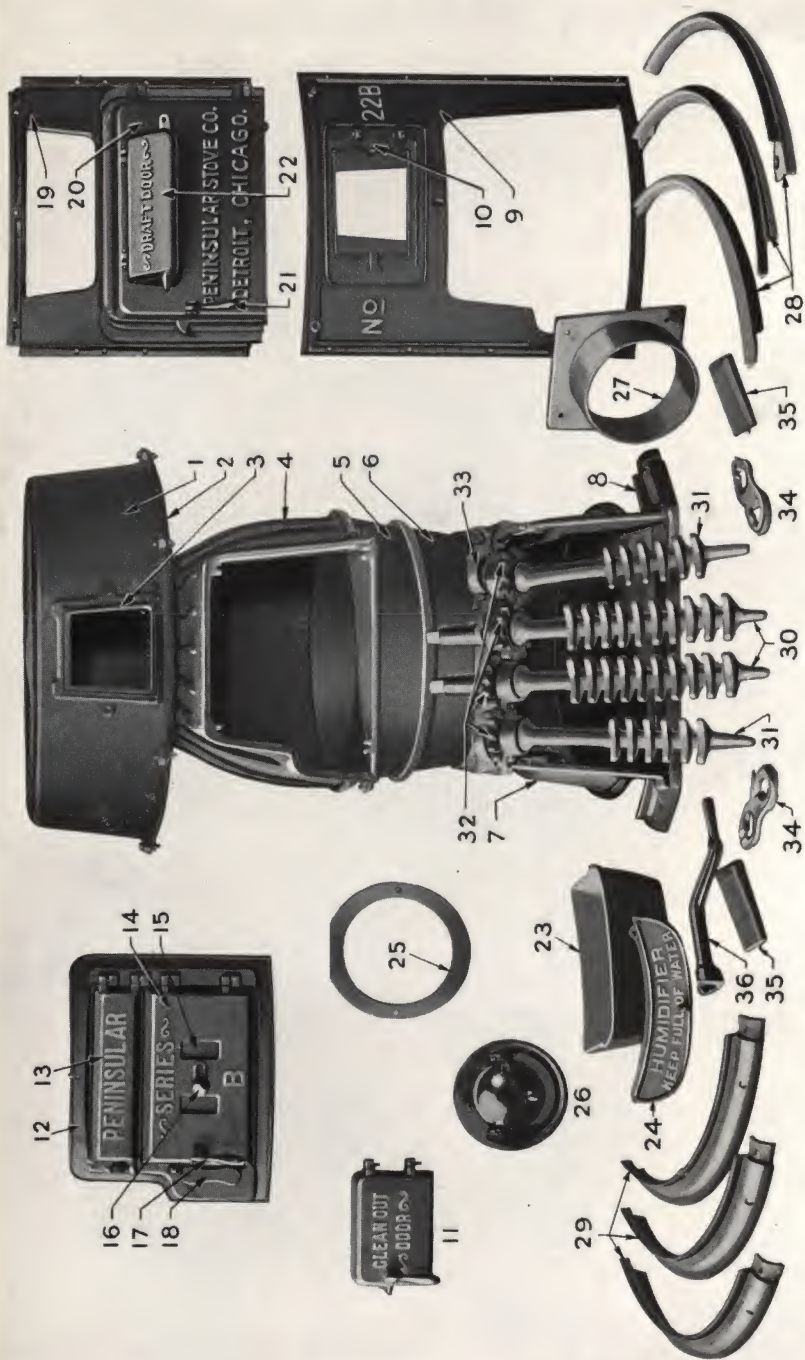


No. 6140

Series Furnace Sectional Parts

- 1—Upper east radiator.
- 2—Clean-out collar cast radiator.
- 3—Clean out door cast radiator.
- 4—Radiator bottom.
- 5—Feed section.
- 6—Water pan.
- 7—Lower fire pot.
- 8—Ash pit comp.—right and left side and back and top.
- 9—Ash pit bottom.
- 10—Long grate bars.
- 11—Short grate bars.
- 12—Dust flue.
- 13—Dust flue damper handle.
- 14—Lower grate holder.
- 15—Upper grate holder.
- 16—Center casing rings.
- 17—Bottom base rings.
- 18—Top casing rings.
- 19—Bottom brace.
- 20—Water pan cover.
- 21—Water pan frame.
- 22—Shaker.
- 23—Upper main front.
- 24—Clean-out door.
- 25—Feed door.
- 26—Water front stop.
- 27—Lower main front.
- 28—Number plate.
- 29—Ash pit door.
- 30—Draft door.
- 31—Smoke pipe collar for cast radiator.
- 32—Radiator top for steel radiator.
- 33—Low radiator for steel radiator.
- 34—Comb. dome for steel radiator.
- 35—Inside steel radiator.
- 36—Outside steel cast lining.
- 37—Comb. dome lining.
- 38—Pipe collar for steel radiator.
- 39—Clean-out frame on steel radiator.
- 40—Clean-out stop on steel radiator.
- 41—Smoke pipe collar.
- 42—Check damper.





18B Series Furnace Sectional Parts

- 1—Top half cast radiator.
- 2—Lower half cast radiator.
- 3—Radiator clean out door frame.

- 4—Feed section.
- 5—Upper fire pot.
- 6—Lower fire pot.
- 7—Feed door frame.
- 8—Ash pit bottom.
- 9—Upper main front.
- 10—Clean out door frame.
- 11—Clean out door.
- 12—Feed door frame.
- 13—Feed door.
- 14—Lower feed door.
- 15—Lower feed door damper.
- 16—Lower feed door knob.

- 17—Lower feed door handle.
- 18—Water front coil plate.
- 19—Lower main front.
- 20—Ash door handle.
- 21—Ash door.
- 22—Draft door.
- 23—Water pan.
- 24—Water pan cover.
- 25—Casing collar.
- 26—Check damper.
- 27—Radiator smoke pipe
- 28—Center casing ring.
- 29—Base ring.

- 30—Long grate bars
- 31—Short grate bars.
- 32—Grate cogs.
- 33—Lower grate holders.
- 34—Base extension brace
- 35—Shaker.



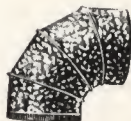
The following parts are listed starting from the furnace with the casing collar. Go through each page and note the parts needed and your pipe order will be complete.



Casing Collar

Size of Pipe.....	9-inch
Size of Pipe.....	10-inch
Size of Pipe.....	12-inch
Size of Pipe.....	14-inch

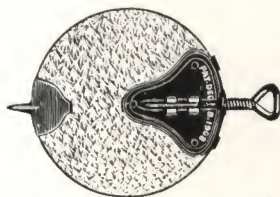
See Price List



Galvanized Cold Air Elbows

90° Elbow.....	14"	16"	18"	20"	22"	24"
60° Elbow.....	14"	16"	18"	20"	22"	24"
45° Elbow.....	14"	16"	18"	20"	22"	24"

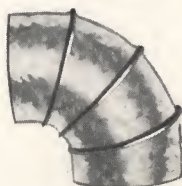
See List Price



No Rivet Galvanized Iron Dampers

Size of Damper.....	9-inch
Size of Damper.....	10-inch
Size of Damper.....	12-inch
Size of Damper.....	14-inch

See Price List



Galvanized Iron Smoke Pipe Elbows

90 degree 4 piece	60 degree 3 piece
22½ to 30 degree 2 piece	

Size of Elbow.....	8-inch
Size of Elbow.....	9-inch
Size of Elbow.....	10-inch

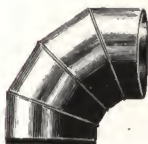
See Price List



Tin Hot Air Pipe

Size of Pipe.....	9-inch
Size of Pipe.....	10-inch
Size of Pipe.....	12-inch

See Price List

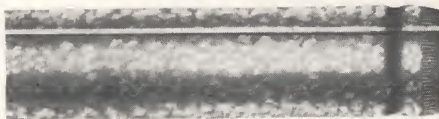


Tin Hot Air Elbows

90 degree 4 piece	60 degree 3 piece
22½ to 30 degree 2 piece	

Size of Elbow.....	9-inch
Size of Elbow.....	10-inch
Size of Elbow.....	12-inch

See Price List

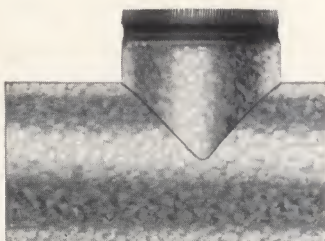


Galvanized Iron Cold Air and Smoke Pipe

8"	9"	10"	14"	16"	18"	20"	22"	24"
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See Price List





Smoke Tee Connection

Made of Galvanized Iron

Size of Smoke Pipe.....	8-inch
Size of Smoke Pipe.....	9-inch
Size of Smoke Pipe.....	10-inch

See List Price

In ordering smoke pipe Tee be sure and advise us what number Peninsular furnace it is for.

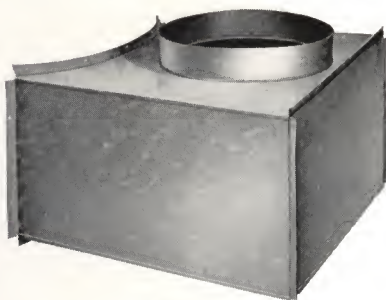


Lower casing collar used where no cold air connection shoe is used to join cold air pipe into casing.

12" 14" 16"

See Price List

Galvanized Cold Air Connections



Style C

Size of Collar.....	14 inches
Size of Collar.....	16 inches
Size of Collar.....	18 inches
Size of Collar.....	20 inches
Size of Collar.....	22 inches
Size of Collar.....	24 inches

See Price List

In ordering above always state size of Peninsular Circulator the cold air connection is to be used on.



Cast Smoke Pipe Damper

Size of Damper.....	8-inch
Size of Damper.....	9-inch
Size of Damper.....	10-inch

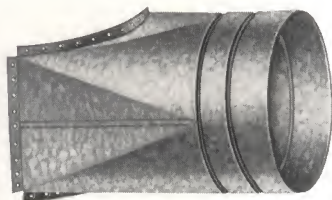
See Price List



Ceiling Collar Fitted in a Piece of Galvanized Iron to Go Underneath Cold Air Face Plate

14".....	18 x 18
14".....	18 x 34
16".....	20 x 34
18".....	22 x 34
20".....	24 x 34
24".....	28 x 34

See Price List



Style P

Size of Collar.....	14 inches
Size of Collar.....	16 inches
Size of Collar.....	18 inches
Size of Collar.....	20 inches
Size of Collar.....	22 inches
Size of Collar.....	24 inches

See Price List

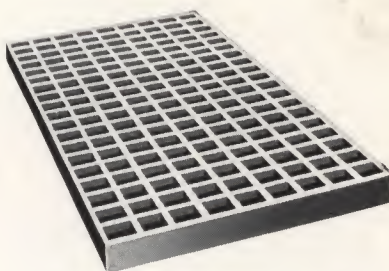




Ceiling Iron for Joist Casing for Cold Air

Ceiling Iron.....	18" wide
Ceiling Iron.....	34" wide

See Price List

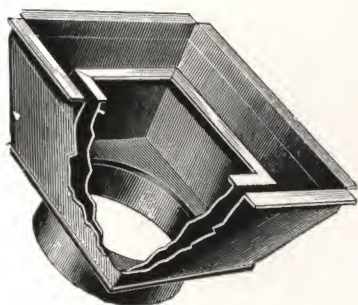


Wooden Cold Air Faces

Stock Sizes Carried

Size.....	16 x 30
Size.....	18 x 30

See Price List

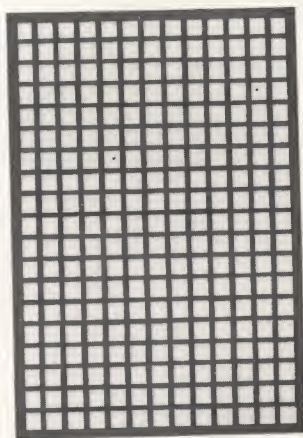


Cut 11

Double Register Box—First Floor

Size Register, 8 x 10.....	Size Collar, 9"
Size Register, 9 x 12.....	Size Collar, 9"
Size Register, 10 x 12.....	Size Collar, 10"
Size Register, 12 x 14.....	Size Collar, 12"
Size Register, 14 x 18.....	Size Collar, 14"

See Price List



We carry the following Cast Iron Face Plate in stock:

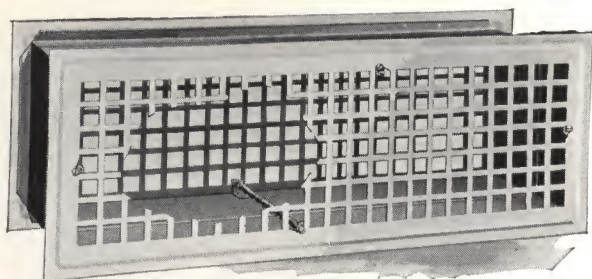
Size.....	14 x 18
Size.....	16 x 20
Size.....	16 x 24
Size.....	16 x 32
Size.....	18 x 24
Size.....	20 x 24
Size.....	20 x 26
Size.....	21 x 29
Size.....	22 x 30
Size.....	24 x 30
Size.....	30 x 30

See Price List



Adjustable Wall Ventilator to Go in Wall near Ceiling

Sizes
12 x 36" 12 x 32"
See Price List



We carry the following sizes of floor registers and borders in stock:

Size..... 8 x 10	Size..... 16 x 20
Size..... 9 x 12	Size..... 16 x 24
Size..... 10 x 12	Size..... 18 x 24
Size..... 12 x 14	Size..... 20 x 24
Size..... 14 x 18	Size..... 20 x 26

See Price List

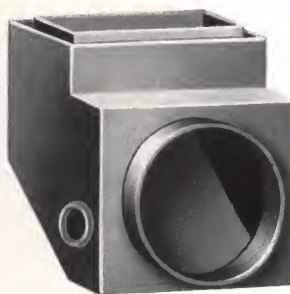


Adjustable Ceiling Ventilator

Size..... 10 x 12
Size..... 12 x 14

See Price List

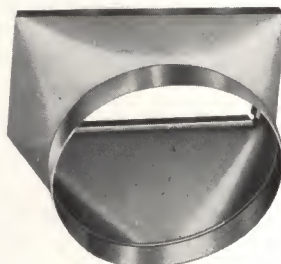
Foot Pieces for First Floor Base Registers



Cut 10

Foot Piece

For 9 Base Box (9 x 12)..... 9" col.
For 10 Base Box (10 x 12)..... 10" col.
For 12 Base Box (12 x 14)..... 12" col.
For 18 Base Box (9 x 12) on each side 12" col.
For 20 Base Box (10 x 12) on each side 12" col.



Cut B

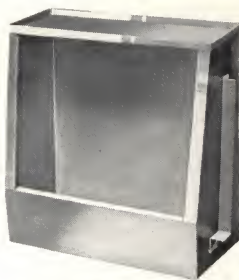
Foot Piece

In ordering state what size round pipe and base box you are going to use.
No. Safety Pipe.

No. 9 Base Box.....	9" Col.
No. 10 Base Box.....	10" Col.
No. 12 Base Box.....	12" Col.
No. 18 Base Box.....	12" Col.
No. 20 Base Box.....	12" Col.

See Price List





First Floor Base Box

	Size Round Pipe	Size Register
Size 9.....	9"	No. 9 Base Reg.
Size 10.....	10"	No. 10 Base Reg.
Size 12.....	12"	No. 12 Base Reg.

See Price List

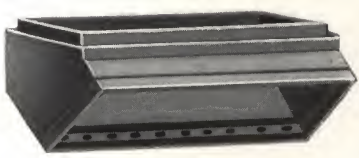


No. 8

Offset

Size No. 7.....	Wall Pipe
Size No. 8.....	Wall Pipe
Size No. 13.....	Wall Pipe

See Price List



Half Elbow for First Floor Register Box

No.	9	10	12	18	20
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See Price List



8 in. Piece Pipe

Extension Pipe

To go on bottom of Base Box so foot piece may be connected

Made in the following lengths:

Size Base Box	9	10	12	18	20
Length Pipe...	2 1/2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"
	4 3/4"	4 3/4"	4 3/4"	4 3/4"	4 3/4"
	8"	8"	8"	8"	8"



No. 9

Two-Piece Offset

Size No. 7.....	Wall Pipe
Size No. 8.....	Wall Pipe
Size No. 13.....	Wall Pipe

See Price List

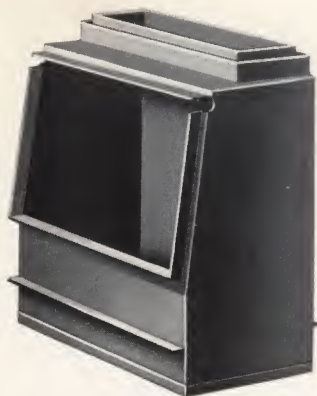


Base Box for Register on Either Side

Size Round Pipe	
With a 9 Base Reg. (9 x 12) on each side..	10"
With a 10 Base Reg. (10 x 12) on each side..	12"

See Price List





**Base Box for Base Register
with Extension Top**

	Size Round Pipe	Size Register
Size 9	9"	No. 9 Base Reg.
Size 10	10"	No. 10 Base Reg.
Size 12	12"	No. 12 Base Reg.

See Price List



Cut 10

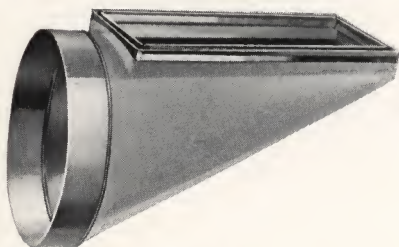
Foot Piece

In ordering state what size wall pipe and round pipe to use.

Size No., 7	.....	Pipe, 9"
Size No., 8	.....	Pipe, 9"
Size No., 13	.....	Pipe, 10"

See Price List

Foot Pieces for Wall Pipe

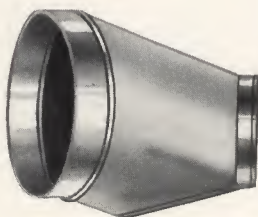


Cut S

Foot Piece

No. Safety Pipe, 7	.....	Size Collar, 9-in.
No. Safety Pipe, 8	.....	Size Collar, 9-in.
No. Safety Pipe, 13	.....	Size Collar, 10-in.

See Price List



Cut B

Foot Piece

In ordering state what size round pipe and wall pipe you are going to use.

No. Safety Pipe, 7	.....	Size Collar	.....	9"
No. Safety Pipe, 8	.....	Size Collar	.....	9"
No. Safety Pipe, 13	.....	Size Collar	.....	10"

See Price List



Double Wall Pipe

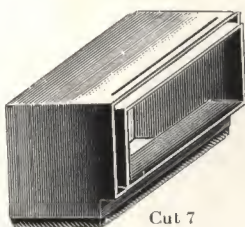
Size, 7	.....	Outside Measurement, 3 5/8 x 9 7/8
Size, 8	.....	Outside Measurement, 3 5/8 x 12 5/8
Size, 13	.....	Outside Measurement, 3 5/8 x 14 5/8

Furnished following lengths:

2 1/2 inches	10 3/4 inches
4 3/4 inches	15 1/4 inches
8 inches	26 3/4 inches

See Price List



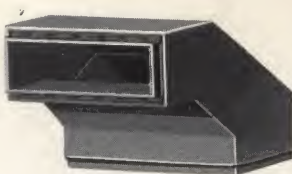


Cut 7

90° Square Elbow

Size, 7.....Outside Measurement, $3\frac{5}{8} \times 9\frac{7}{8}$
 Size, 8.....Outside Measurement, $3\frac{5}{8} \times 12\frac{5}{8}$
 Size, 13.....Outside Measurement, $3\frac{5}{8} \times 14\frac{5}{8}$

See Price List



Cut 5

90° 2-Piece Elbow

Size, 7.....Outside Measurement, $3\frac{5}{8} \times 9\frac{7}{8}$
 Size, 8.....Outside Measurement, $3\frac{5}{8} \times 12\frac{5}{8}$
 Size, 13.....Outside Measurement, $3\frac{5}{8} \times 14\frac{5}{8}$

See Price List

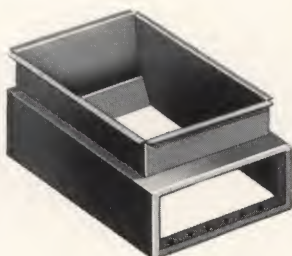


Cut 17

Tee with Large Riser and Small Branches

Size No. 7...Outside Measurement, $3\frac{5}{8} \times 9\frac{7}{8}$
 Size No. 8...Outside Measurement, $3\frac{5}{8} \times 12\frac{5}{8}$
 Size No. 13...Outside Measurement, $3\frac{5}{8} \times 14\frac{5}{8}$

See Price List



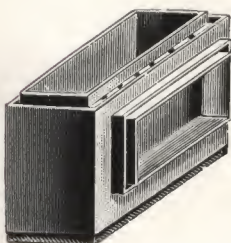
Cut 23

Second Floor Floor Box

When ordering state what size wall pipe you are going to use.

Size Register, 8x10..... Size Wall Pipe, 7
 Size Register, 8x12..... Size Wall Pipe, 8
 Size Register, 10x12..... Size Wall Pipe, 13

See Price List

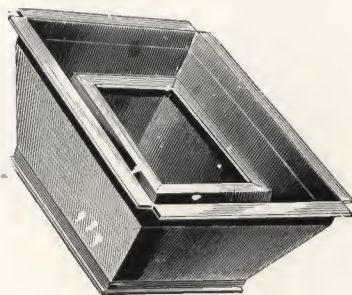


Cut 19

Tee with Large Riser and Extension and Small Branch

Size No. 7...Outside Measurement, $3\frac{5}{8} \times 9\frac{7}{8}$
 Size No. 8...Outside Measurement, $3\frac{5}{8} \times 12\frac{5}{8}$
 Size No. 13...Outside Measurement, $3\frac{5}{8} \times 14\frac{5}{8}$

See Price List



No. 16

Double Register Box for Floor, Without Collar

For floor register and border give size wall pipe it has to fit, and size register desired to use.

No. Safety Pipe, 7.....Size Register, 8x10
 No. Safety Pipe, 8.....Size Register, 9x12
 No. Safety Pipe, 13.....Size Register, 12x15

See Price List





Cut 1

Single Register Box

To go in wall above base board.

Size Wall Pipe, No. 7.....Size Register, 8x10
Size Wall Pipe, No. 8.....Size Register, 8x12

See Price List

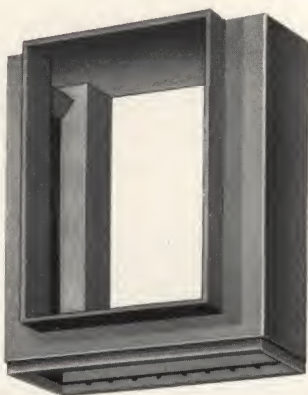


Base Register

Ox. Black Nickel

Size, 9, 9 x 12.....
Size, 10, 10 x 12.....
Size, 12, 12 x 14.....

See Price List



Cut 2

Register Box for Two Registers

Size Wall Pipe, No. 8.....Size of Register on
each side, 8x10 up

See Price List



Wall Register Across

Ox. Black Nickel

Size, 8x10.....
Size, 8x12.....

See Price List







